# HCD-H650/H650M

# SERVICE MANUAL

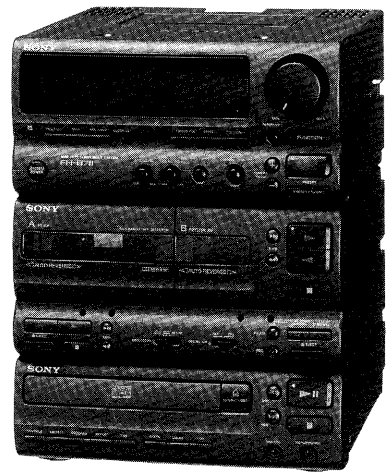

Photo : HCD-H650 E model

*AEP Model*
*E Model*
*Australian Model*
*HCD-H650*

*Canadian Model*
*AEP Model*
*UK Model*
*HCD-H650M*

- HCD-H650 is the tuner, deck, CD and amplifier section in FH-650/B711.
- HCD-H650M is the tuner, deck, CD and amplifier section in MHC-650.

## SPECIFICATIONS

| | | | |
|---|---|---|---|
| CD Section | Model Name Using Similar Mechanism | | NEW |
| | CD Mechanism Type | | CDM28-5BD15A |
| | Base Unit Name | | BU-5BD15A |
| Tape deck Section | Model Name Using Similar Mechanism | | HCD-H61/H61M |
| | Tape Transport Mechanism Type | DECK A | TCM-190RA12AL |
| | | DECK B | TCM-190RB53A |

**CD player section**

System: Compact disc digital audio system
Laser: Semiconductor laser
Wavelength: 780 – 790 nm

**Tuner section**

FM stereo, FM/AM superheterodyne tuner

*FM tuner section*

Tuning range: 87.5 -108.0 MHz (50 kHz step for except Canadian, East European model) (100kHz step for Canadian model)
FM1 : 65 - 74MHz
FM2 : 87.5 - 108MHz
(East European model)
Aerial: FM lead antenna (HCD-650M)
FM telescopic aerial (HCD-650)
Aerial terminals: 75 ohm unbalanced
Intermediate frequency: 10.7 MHz

*AM tuner section*

AEP, UK, East European, German model :
Tuning range
MW: 531 - 1,602 kHz
LW: 153 - 279 kHz
Canadian model : AM: 530 -1,710 kHz (10 kHz Step)
531 - 1,710 kHz (9kHz Step)
Italian model : MW : 522 - 1611kHz (9kHz step)
LW : 153 - 279kHz
Australian, MX, E, Saudi Arabia, Malaysia, Singapore model :
MW: 531 - 1,602 kHz (9 kHz step)
530 - 1710 kHz (10 kHz step)
SW: 5.95 - 17,9MHz
Aerial: AM loop aerial
External aerial terminals
Intermediate frequency: 450 kHz

**Cassette deck section**

Recording system: 4-track 2-channel stereo
Frequency response: (DOLBY NR OFF)
60 – 13,000 Hz (±3 dB), using TYPE I cassette (Sony HF-S)
60 – 14,000 Hz (±3 dB), using TYPE II cassette(Sony UX-S)
Wow and flutter: 0.1% WRMS +0.3% (DIN)

**Amplifier section**

For UK, AEP model :
Continuous RMS power output:
35+35 watts (6 ohms at 1 kHz, DIN)
40+40 watts (6 ohms at 1 kHz, 5% THD)
Music power output:
80+80 watts (6 ohms at 1 kHz)
For Canadian model :
Continuous RMS power output:
40+40 watts (6 ohms at 1 kHz, 5%)
For Singapore, E, Saudi Arabia, Malaysia, Australian, MX model :
Coutionuous RMS Power output:
40+40 watts (6 ohms at 1 kHz, 5% THD)
Peak music power output:
500 watts (4 speakers driven)
Inputs
MIX MIC (mini jack):
for Canadian, Australian, E, Saudi Arabia, MX, Malaysia, Singapore model :
Sensitivity 1 mV, impedance 600 ohms
MD/AUX (phono jack):
for Canadian, Australian, E, Saudi Arabia, MX, Malaysia, Singapore model :
Sensitivity 450 mV, impedance 47 kilohms

— Continued on page 2 —

使用時は添付資料も参照のこと
Refer to the additional documents.

COMPACT DISC DECK RECEIVER

SONY®

MD/PHONO :(MD Position)
For UK, AEP, G, IT, EE model :
Sensitivity 5 mV
MD/PHONO :(Phono Position)
for AEP, UK, German, Italian, East European model :
Sensitivity 250mV,
impedance 47 kilohms
Outputs
HEADPHONES (stereo mini jack):
accept headphones of
8 ohms or more.
SPEAKER: accept impedance of 6 to
16 ohms.
SURROUND SPEAKER:
For E, Australian, Saudi Arabia, Malaysia, MX model :
accept impedance of 8 to
16 ohms.
Singapore model :16 Ωs.

**Speaker section**

Speaker system
3-way system
Speaker units Woofer: 13 cm dia., cone type
Tweeter: 5 cm dia., cone type
Super tweeter: 2 cm dia., dome type
Enclosure Bass reflex
Frequency range
65 Hz - 20 kHz
Sensitivity 88 dB/W/m
Rated impedance
6 ohms
Dimensions Approx. 175 x 285 x 235 mm (w/h/d) (7 x 11 1/4 x 9 3/8 inches)
Mass Approx. 2.8 kg net per speaker (6 lb. 2.8 oz.)

**General**

| Destination | Power requirements | Power consumption |
|---|---|---|
| Canadian model | 120V AC, 50Hz | 120W |
| Australian model | 220 – 240V AC, 50Hz | 150W |
| AEP, German, Italian, East European model | 220 – 230V AC, 50/60Hz | 120W |
| UK model | 240V AC, 50Hz | 120W |
| E, Saudi Arabia, MX, Malaysia, Singapore model | 110 – 120V/220V – 240V AC, 50/60Hz Adjustable with the Voltage Selector | 150W |

Dimensions Approx. 225 x 285 x 275 mm (w/h/d) (8 7/8 x 11 1/4 x 10 7/8 inches) incl. projecting parts and controls
Mass Approx. 6.5 kg (14 lb. 50 oz.)

Design and specifications are subject to change without notice.

*Note*
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ⊡⊡ are trademarks of Dolby Laboratories Licensing Corporation.

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**SAFETY-RELATED COMPONENT WARNING!!**

**COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**

**ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!**

**LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.**

# SECTION 1
# GENERAL

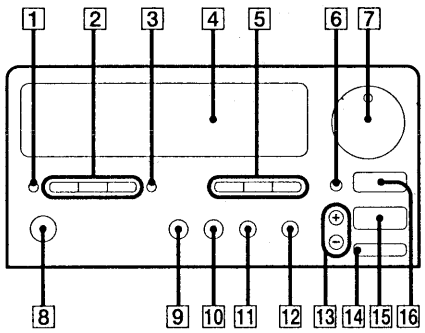
**This section is extracted from HCD-H650 (E, Australian, Saudi Arabia, MX, Malaysia, Singapore Model) instruction manual.**

## LOCATION AND FUNCTION OF CONTROLS

● AUS : Australian
G : German
IT : Italian
MX : Mexican
EA : Saudi Arabia
EE : Easc European
MY : Malaysia
SP : Singapore

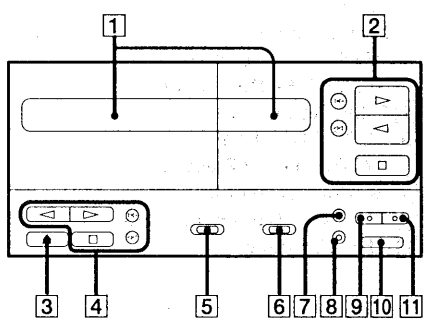
## Front Panel

### Tuner/Amplifier



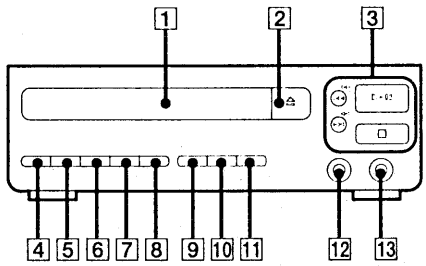

1 Remote sensor
2 TIMER SET button
DAILY button
REC TIMER button
3 CLOCK SET button
4 Display window
5 KARAOKE PON button
EFFECT button
EQ PRESET button
6 MEMORY/NEXT button
7 VOLUME control
8 SYSTEM POWER ON/STANDBY switch
9 MIC LEVEL control
10 DIGITAL ECHO control
11 MULTIPLEX button
E, AUS, EA, MX, MY, SP model
12 DBFB button
13 TUNER/TIMER (+/-) button
14 PRESET/TUNING buttons
15 TUNER/BAND button
16 FUNCTION button

### Tape player



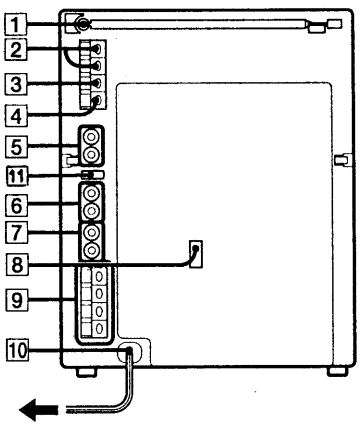

1 Tape compartments
2 Tape operating buttons and lamp (for deck B)
3 ⏏ button (for deck A)
4 Tape operating buttons and lamp (for deck A)
5 DIRECTION switch
6 DOLBY NR switch
7 ⏸ PAUSE button
8 ● REC button
9 HIGH SPEED DUBBING button
10 ⏏ button (for deck B)
11 CD SYNCHRO button

### CD player



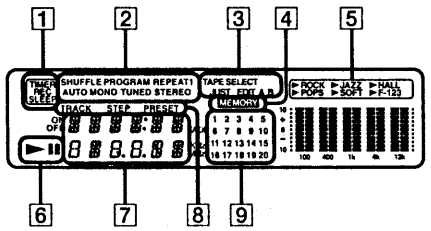

1 CD tray
2 ⏏ OPEN/CLOSE button
3 CD player operating buttons
4 CONTINUE button
5 SHUFFLE button
6 PROGRAM button
7 REPEAT button
8 TIME button
9 CHECK button
10 CLEAR button
11 EDIT button
12 MIX MIC jack
13 HEADPHONES jack

## Rear Panel



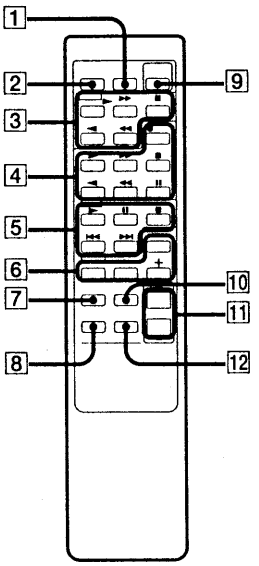
1 FM telescopic aerial (H650 ONLY)
2 FM 75Ω terminals
3 ⏚ earth terminal
4 AM terminal
5 MD/PHONO jacks (AEP, UK, G, IT, EE model)
MD/AUX jacks (Canadian, E, EA, AUS, MX, MY, SP model)
6 LINE OUT jack
7 SURROUND SPEAKER jack (E, AUS, EA, MY, SP, MX, model)
8 VOLTAGE selector (except for Mexican models) (E, EA, MX, MY, SP model)
9 SPEAKER connector
10 AC power cord
11 MD/PHONO Selector

## Display Window



1 Timer indications
2 CD play and Tuner indication
3 CD recording indication
4 MEMORY indication
5 Audio emphasis indication
6 CD play and pause indication
7 Time/frequency indication
8 TRACK/STEP/PRESET indication
9 Music calendar/preset radio station numbers

## Remote commander

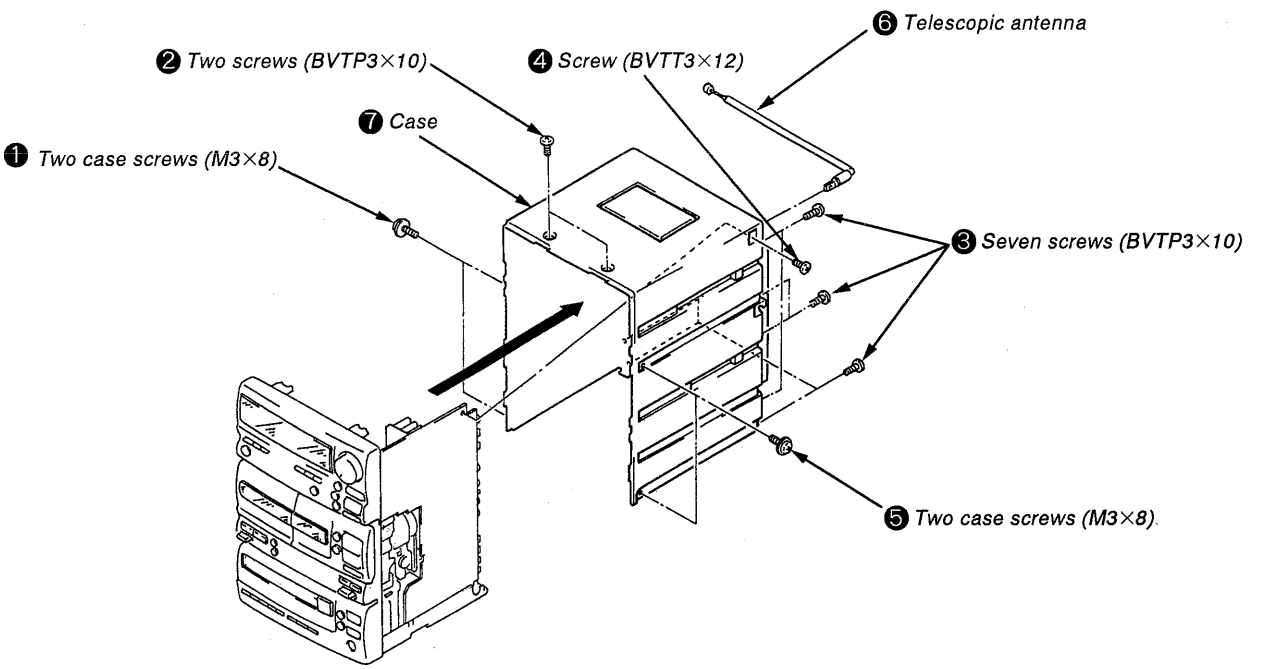


1 SLEEP button
2 FUNCTION button
3 Deck A operating buttons
▶ (front side play)
◀ (reverse side play)
▶▶ (fast rightward)
◀◀ (fast leftward)
■ (stop)
4 Deck B operating buttons
▶ (front side play)
◀ (reverse side play)
▶▶ (fast rightward)
◀◀ (fast leftward)
II (pause)
■ (stop)
● REC (recording)
5 CD operating buttons
▶ (play)
I◀◀ / ▶▶I AMS*
II (pause)
■ (stop)
* AMS: Automatic Music Sensor.
6 Tuner operating buttons
BAND button
PRESET (+/–) buttons
STEREO/MONO button
7 DISPLAY button
8 CLOCK DISPLAY
9 SYSTEM POWER button
10 EQ PRESET button
11 VOL (+/–) (volume) buttons
12 EFFECT button

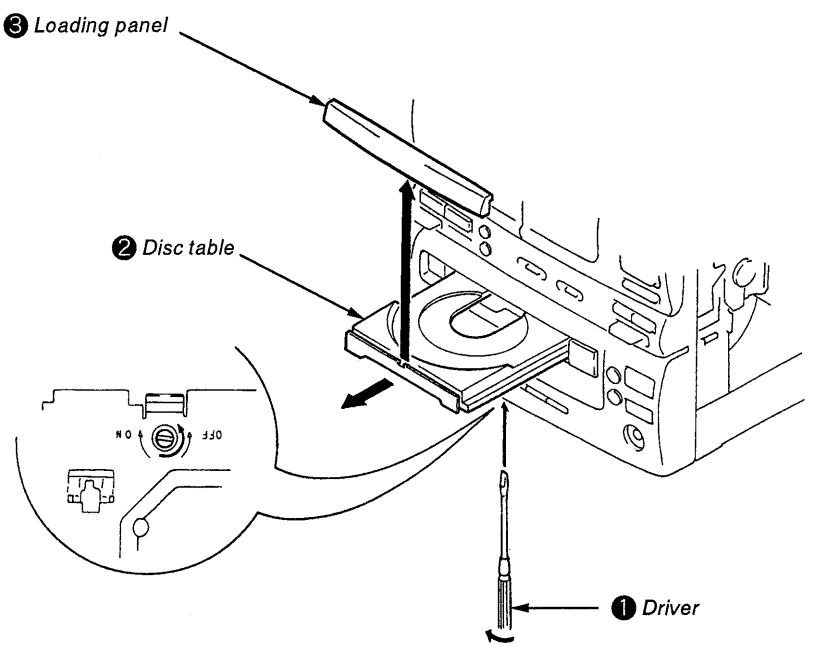
# SECTION 2
# DISASSEMBLY

**Note :** Follow the disassembly procedure in the numerical order given.

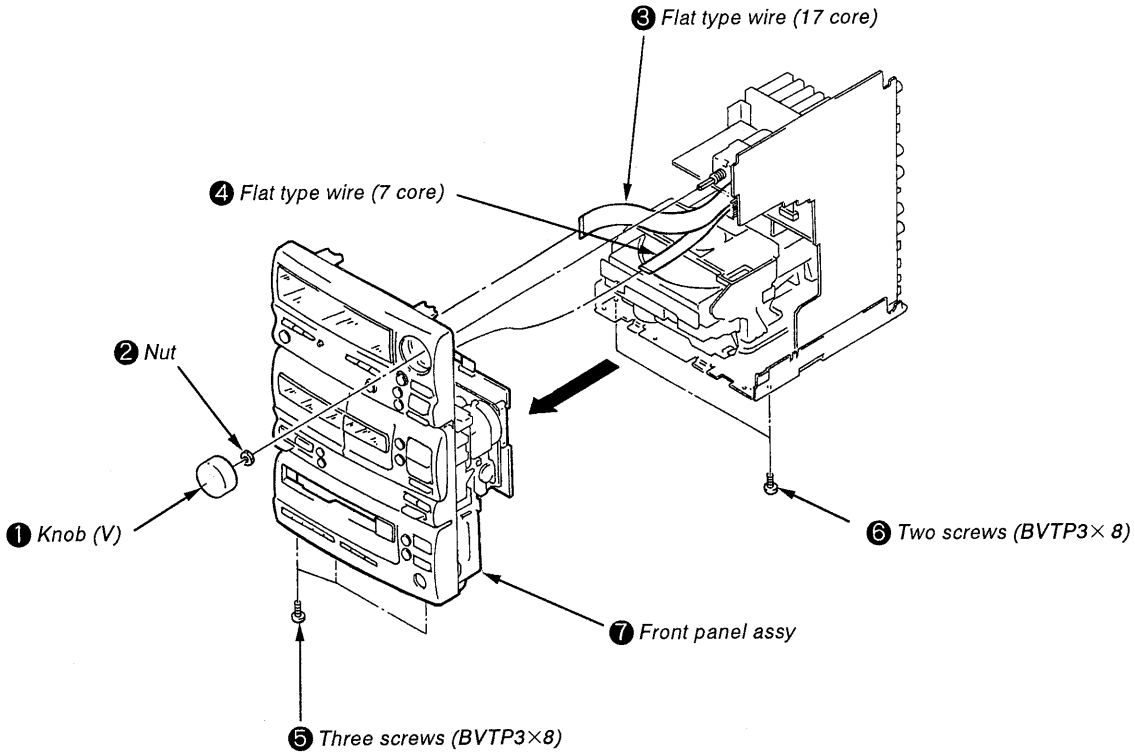
## 2-1. CASE REMOVAL



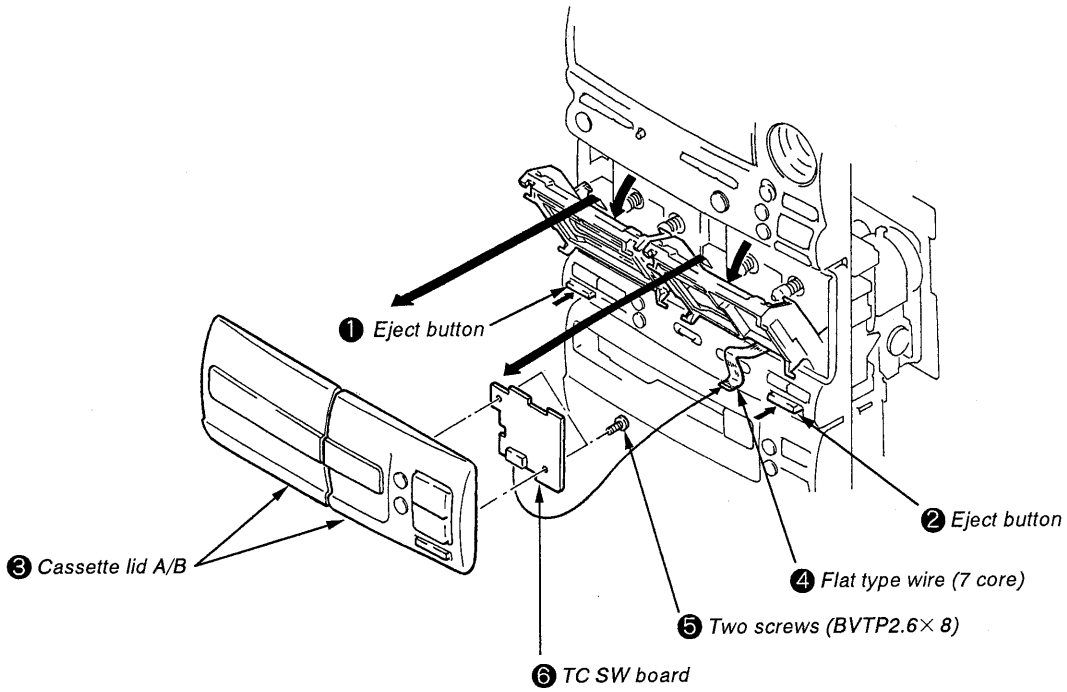

## 2-2. LOADING PANEL REMOVAL



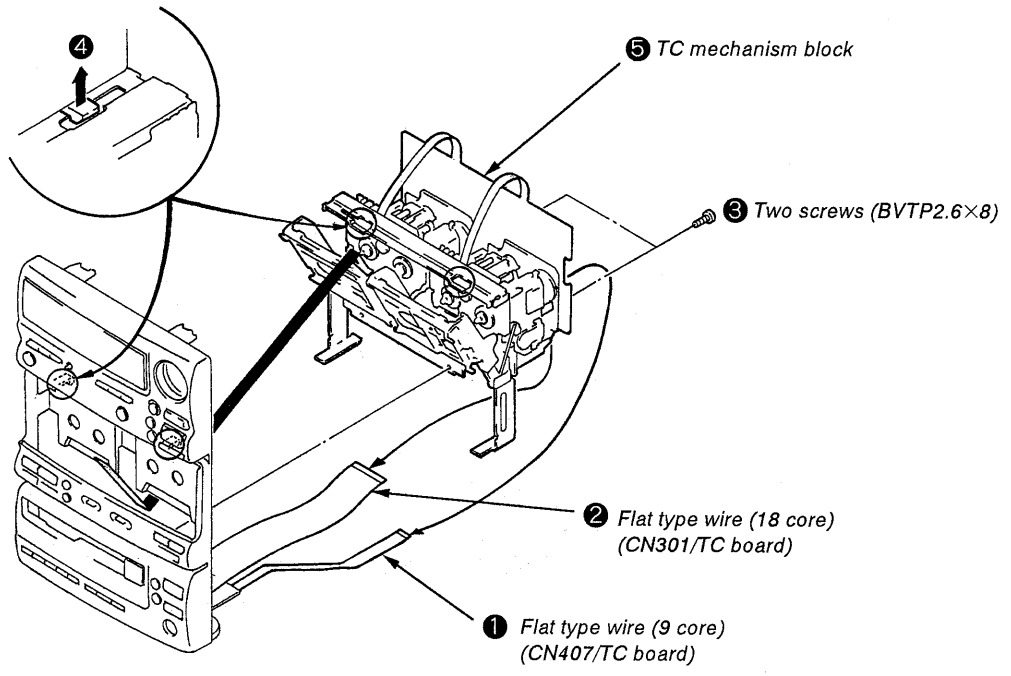
## 2-3. FRONT PANEL REMOVAL



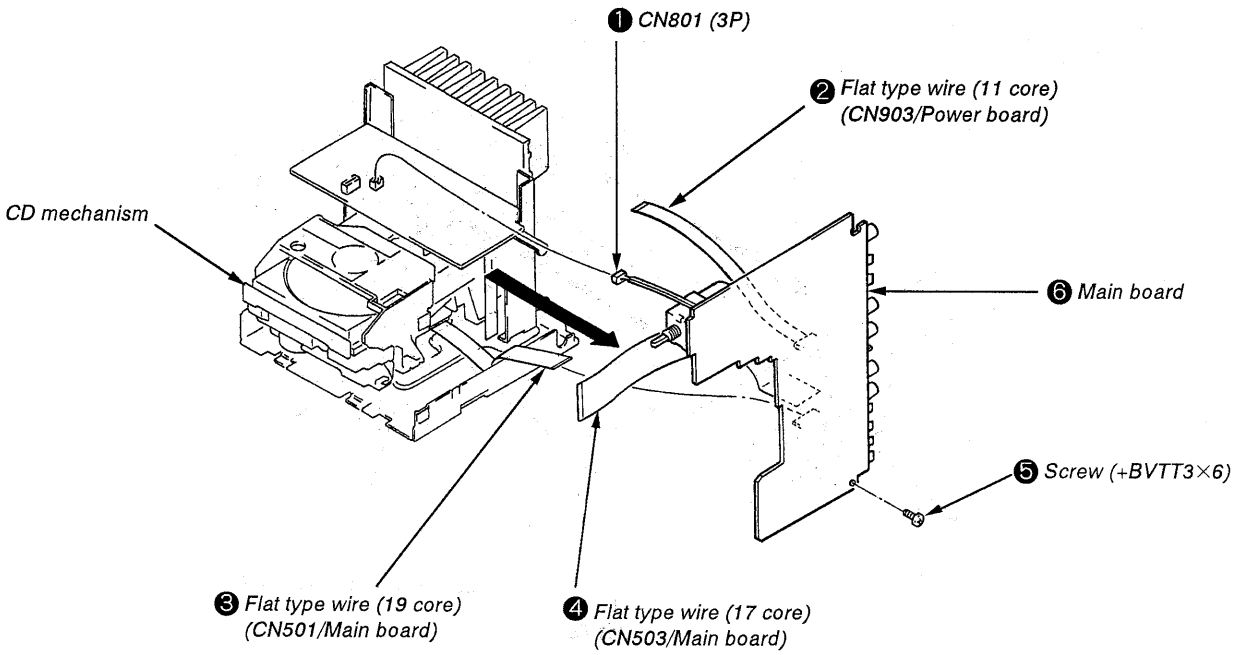

## 2-4. CASSETTE LID REMOVAL



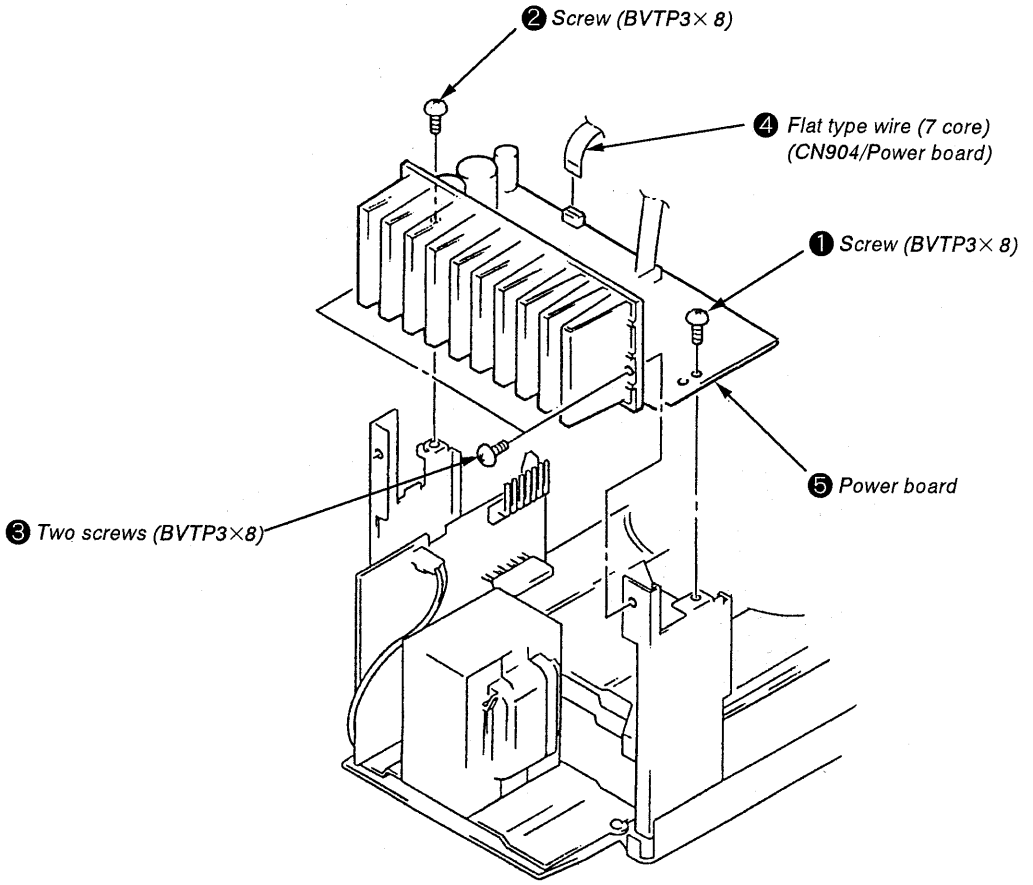
## 2-5. TC MECHANISM BLOCK REMOVAL




## 2-6. MAIN BOARD REMOVAL



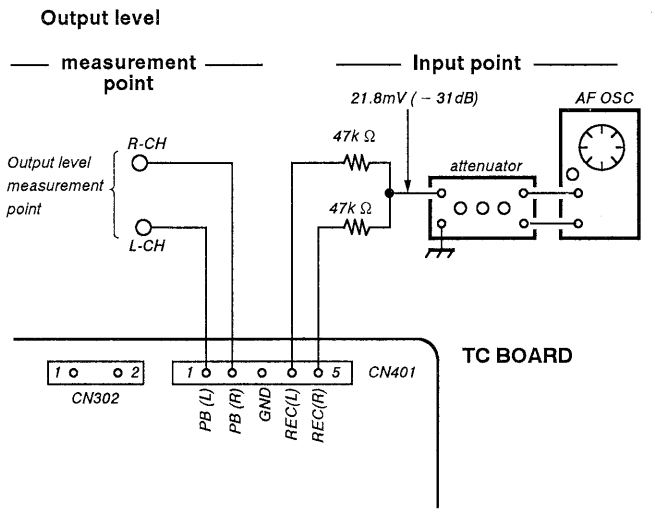
## 2-7. POWER BOARD REMOVAL



# SECTION 3
# ELECTRICAL ADJUSTMENTS

## DECK SECTION

1. The adjustment should be performed in the publication.
   (Be sure to make playback adjustment at first.)
2. The adjustment and measurement should be performed for both L-CH and R-CH.
   - Switch positon
     DOLBY NR switch : OFF
     FUNCTION button : CD
3. Perior to electrical adjustments, short the connector CN401 (test mode).
4. Input point and output level measurement point.




- **Test Tape**

| Tape | Contents | Use |
|---|---|---|
| P-4-A100 | 10kHz, – 10dB | Head Azimuth Adjustment |
| P-4-L300 | 315Hz, 0dB | Level Adjustment |
| WS-48B | 3kHz, 0dB | Tape Speed Adjustment |

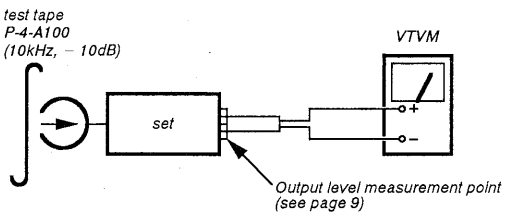
0 dB=0.775V

### Record/Playback Head Azimuth Adjustment

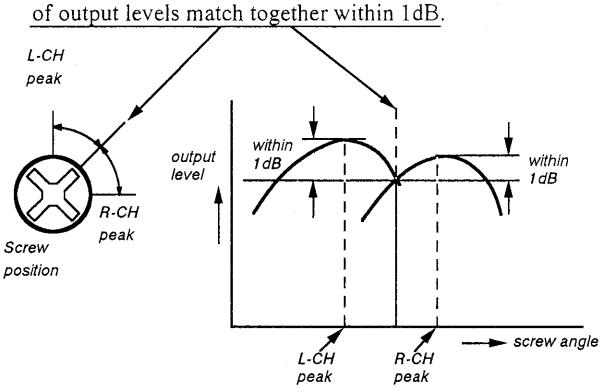
**DECK A** **DECD B**

**Procedure :**

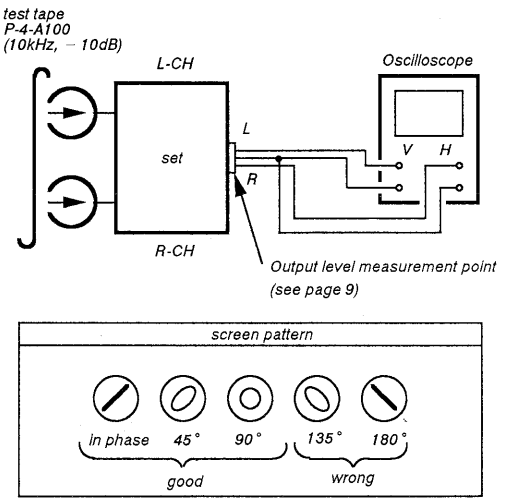
1. Forward Playback mode
   Reverse Playback mode




2. Turn the adjustment screw for the maximum output levels.If these levels do not match,turn the adjustment screw until both of output levels match together within 1dB.



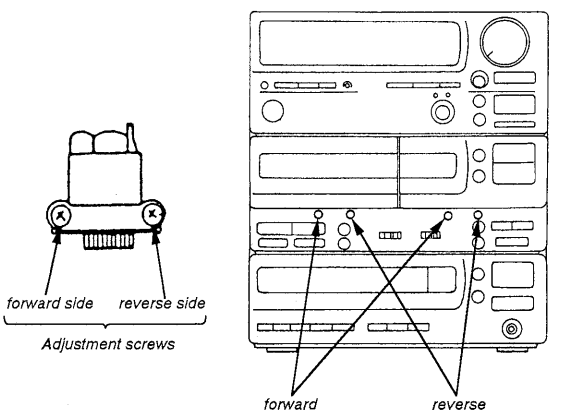

3. Playback Mode




4. Change the review playback mode and repeat the steps 1 to 3.
5. After the adjustment, lock the adjustment screw with suitable locking compound.

**Adjustment Location :**

– record/playback head (Deck A and B)

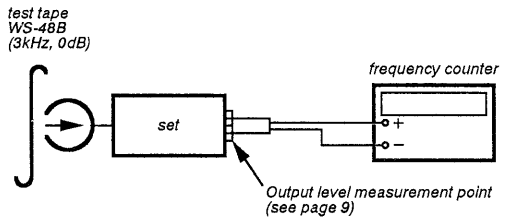


## Tape Speed Adjustment DECK A DECK B

**Procedure :**

- Perform high speed adjustment before normal speed adjustment.

  Mode : Playback




| Speed | Deck | Adjustment | Frequency counter |
|---|---|---|---|
| ※ High | A | RV72 | 5,970 to 6,030Hz |
| | B | RV72 | |
| Normal | A | RV71 | 2,985 to 3,015Hz |
| | B | RV71 | |

* Continue to press HIGH SPEED DUBBING switch (S3019) in playback mode : High speed playback.

Frequency difference between the begining and the end of the tape should be within ± 3%.

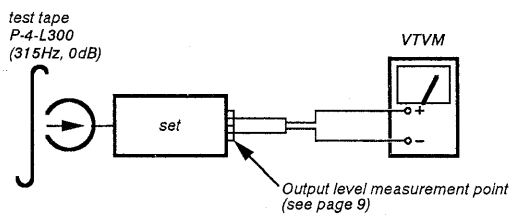
Frequency difference between deck A and deck B the biginning of the tape should be within 1.5%.

**Adjustment Location :** MD (AX) and MD (BX) boards.
(see page 11)

## Playback Level Adjustment DECK A DECK B

**Procedure :**

Mode : Playback




Deck A is RV11(L-CH)and RV21(R-CH), deck B is RV11(L-CH) and RV21(R-CH) so that adjustment within adjustment level as follows.

**Adjustment Level :**

LINE OUT level: – 7.5 ± 0.5dB (0.31 to 0.35V)

Level Difference between Channels : within 0.5dB

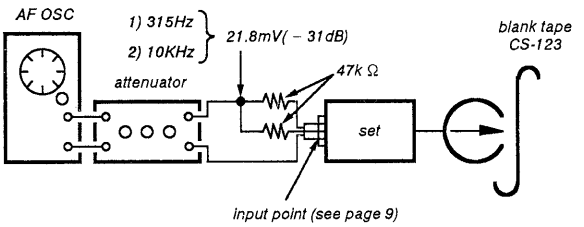
Confirm the DOLBY OUT level does not change in playback mode while changing the mode from playback to stop several times.

**Adjustment Location :** MD (AX) and MD (BX) boards
(see page 11)

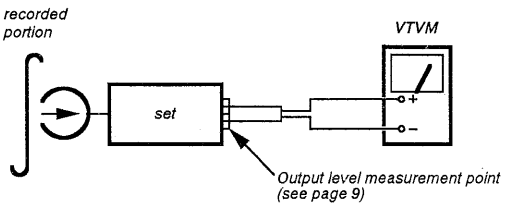
## Record Bias Adjustment DECK B

**Procedure :**

1. Record mode




2. Playback mode




Confirm playback the signal recorded in step 1 become adjustment level as follows.

If these levels do not adjustment level, adjustment the RV12 (L-CH) and RV22 (R-CH) to repeat step 1 and 2.

**Adjustment level :** Playback output of 315Hz to playback output of 10kHz : – 0.5dB to 0.5dB.
( – 1.3 to 1.3mV)

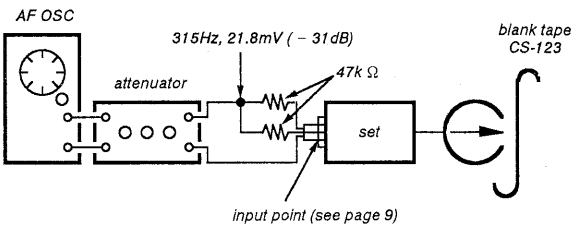
**Adjustment Location :** MD (BX) board. (see page 11)

## Record Level Adjustment DECK B

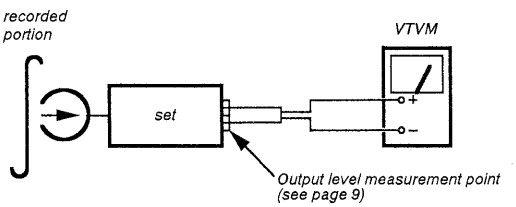
FUNCTION button : CD

**Procedure :**

1. Record mode




2. Playbacd mode



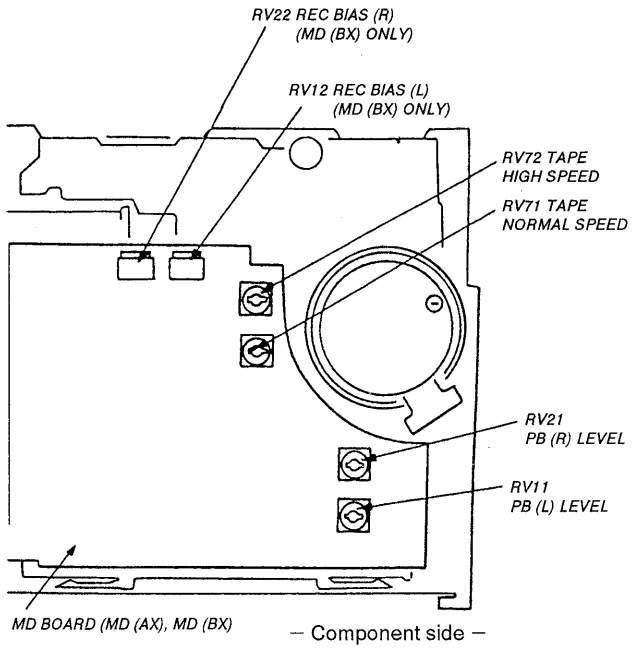
Confirm playback the signal recorded in step become adjustment level as follows.
If these levels do not adjustment level, adjustment the RV401 (L-CH) and RV451 (R-CH) to repeat step 1 and 2.

**Adjustment Level :**
DOLBY OUT level : − 31dB ± 0.5dB (20.6 to 23.1mV)

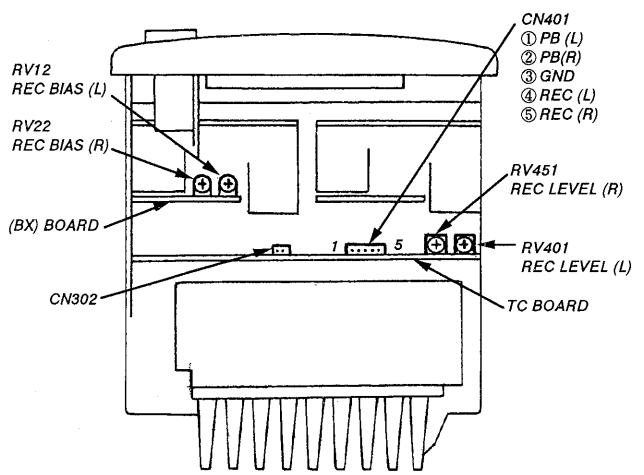
**Adjustment Location :** TC board

**Adjustment Location :**

**Mechanism deck** − rear side −




TC BOARD − Component side −

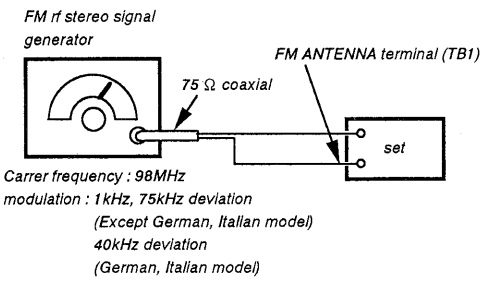


## TUNER SECTION

**Note :** As a front-end (FE1) is difficult to repair if faulty, replace it with new one.

### FM Section Adjustments

**Setting :**




### FM Tuned Indication Lighting Level Adjustment

Band : FM

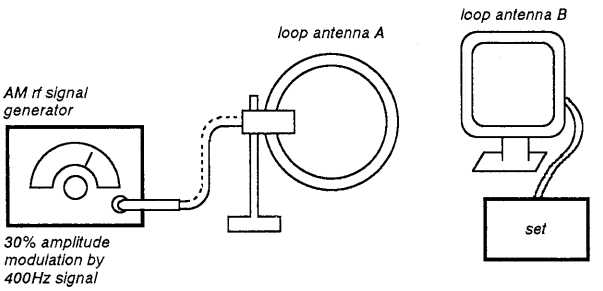
**Procedure :**

1. German, Italian model :
   Supply a 11$\mu$V (21dB$\mu$) 98MHz signal from the ANTENNA terminal.
   Except German, Italian model :
   Supply a 13$\mu$V (23dB$\mu$) 98MHz signal from the ANTENNA terminal.
2. Tune the set to 98MHz.
3. Adjust RV1 so that the TUNED light up.
4. German, Italian model :
   Confirm that the TUNED light off with FM RF signal generator output level set at 18 dB$\mu$ .
   Except German, Italian model
   Confirm that the TUNED light off with FM RF signal generator output level set at 20 dB$\mu$ .

**Adjustment Location :** Main board

### AM Section Adjustment

**Setting :**




### SW OSC Voltage Adjustment

Band : SW
(E, Australian, Saudi Arabia, Malaysia, Singapore model)

**Procedure :**

1. Connecct the VOM to JW693 (OSC)
2. Tune the set to 5.95MHz.
3. Adjust T2 for 1.0 to 1.1V reading on the VOM.
4. Tune the set to 17.90MH.
5. Adjust CT2 for 8.4 to 8.6V reading on the VOM.

### SW Tracking Adjustment

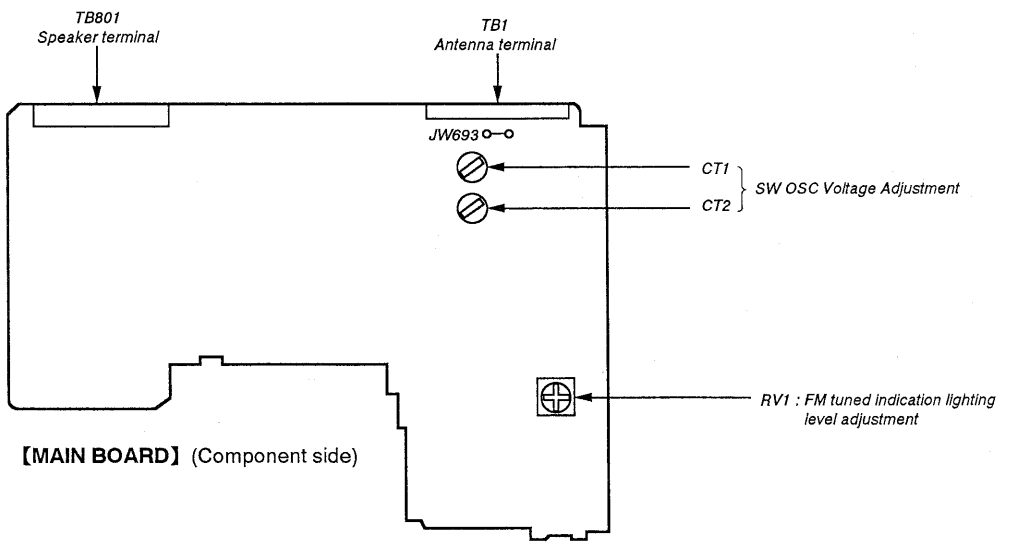
Band : SW

**Procedure :**

1. Connect the VOM to speaker terminal. (TM801)
2. Adjust for a maximum reading on VOM.

| Signal generator and set frequency | Adjustment part |
|---|---|
| 7.0 MHZ | T1 |
| 17.0 MHZ | CT1 |

**Adjustment Location :** Main board

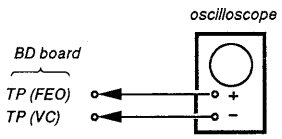


## CD SECTION

**Note :**

1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10M Ω impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

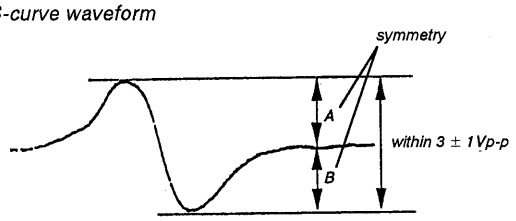
### S-Curve Check




**Procedure :**

1. Connect oscilloscope to test point TP (FEO) and BD board.
2. Connect between test point TP (FES) and TP (VC) by lead wire.
3. Turned Power switch on.
4. Put disc (YEDS-18)in and turned Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 3 ± 1Vp-p.

*S-curve waveform*

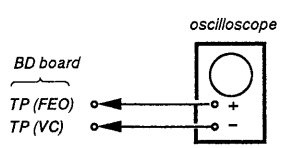



6. After check, remove the lead wire connected in step 2.

**Note :** ● Try to measure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.

● Take sweep time as long as possible and light up the brightness to obtain best waveform.

### RF Level Check



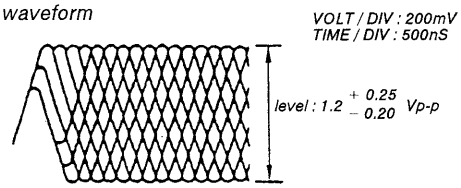

**Procedure :**

1. Connect oscilloscope to test point TP (RFO) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

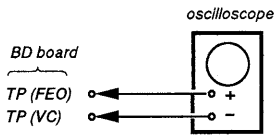
**Note :**

Clear RF signal waveform means that the shape " ◇ " can be clearly distinguished at the center of the waveform.

*RF signal waveform*



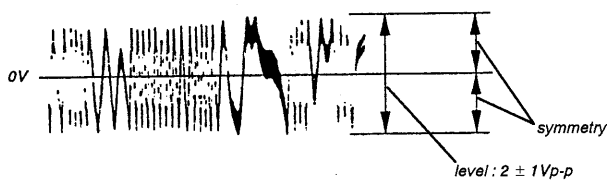

### E-F Balance Check




**Procedure :**

1. Connect test point TP (ADJ) to ground and TP (TES) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the osilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

*Traverse waveform*

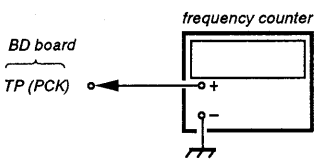



6. Remove the lead wire connected in step 1.

### RF PLL Free-run Frequency Check

**Procedure :**

1. Connect frequency counter to test point (PCK) with lead wire



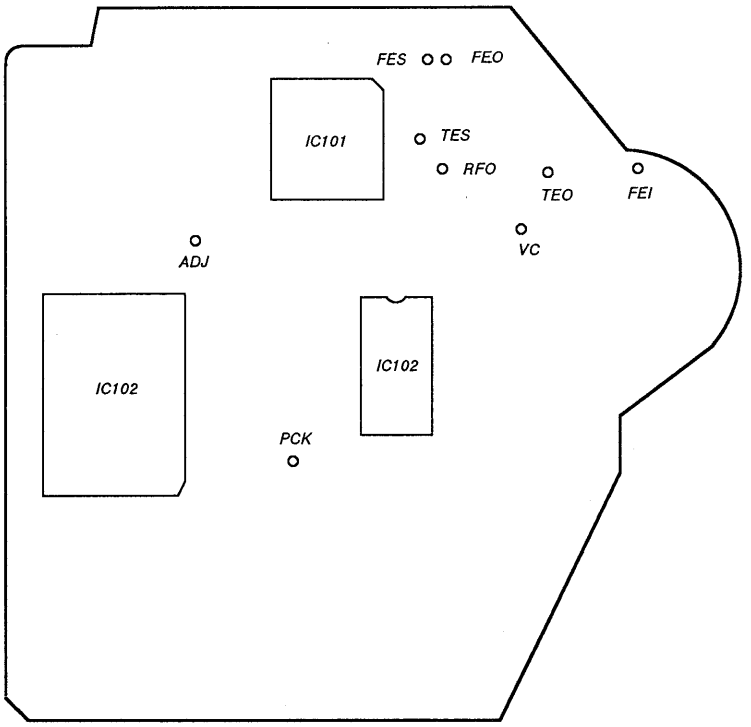

2. Turned Power switch on.
3. Confirm that reading on frequency counter is 4.3218MHz.

### Focus/Tracking Gain

This gain has a margin, so even if it is slightly off. There is no problem.
Therefore, do not perform, this adjustment.
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

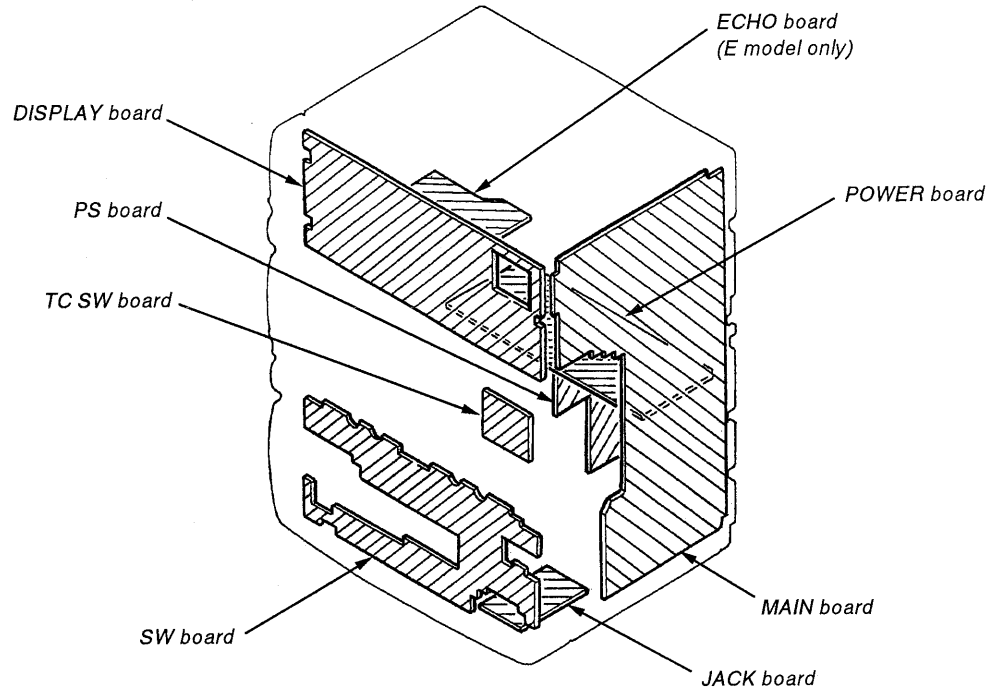
**Adjustment Location :**

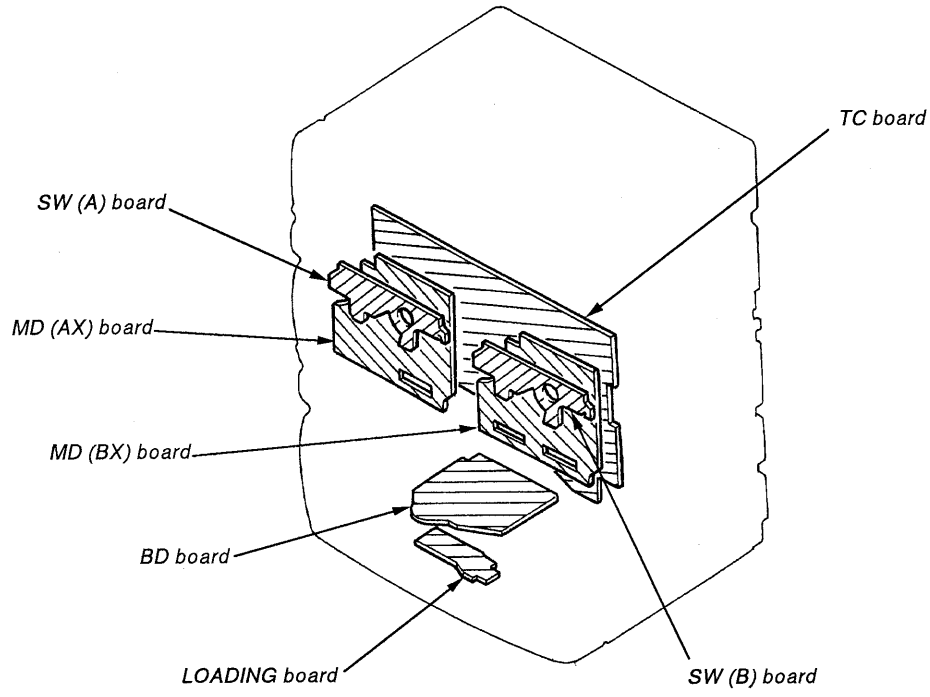
**【BD BOARD】** (SIDE B)



# SECTION 4
# DIAGRAMS

## 4-1. CIRCUIT BOARD LOCATION



## ● SEMICONDUCTOR LOCATION

| Ref. No. | Location | Ref. No. | Location |
|---|---|---|---|
| D1 | B - 1 | Q1 | D - 5 |
| D2 | F - 4 | Q2 | D - 5 |
| D501 | C - 8 | Q3 | D - 6 |
| D502 | E - 8 | Q4 | C - 6 (D - 1) |
| D503 | C - 9 | Q5 | D - 7 |
| D504 | C - 9 | Q6 | B - 5 |
| D551 | C - 9 | Q7 | B - 5 |
| D552 | C - 9 | Q8 | C - 6 (C - 1) |
| D702 | C - 7 | Q9 | B - 6 (B - 1) |
| D703 | C - 13 | Q10 | C - 4 |
| D704 | C - 8 | Q11 | D - 4 |
| D849 | B - 12 | Q12 | C - 4 |
| D899 | B - 12 | Q13 | D - 4 |
| | | Q14 | G - 6 |
| | | Q15 | G - 6 |
| IC1 | E - 4 | | |
| IC2 | F - 6 | Q501 | H - 7 |
| IC501 | D - 12 | Q503 | H - 6 |
| IC502 | G - 4 | Q599 | E - 7 |
| IC601 | B - 8 | Q638 | C - 10 |
| | | Q639 | B - 9 |
| IC602 | C - 9 | | |
| IC603 | B - 10 | Q688 | C - 10 |
| IC605 | C - 11 | Q689 | B - 10 |
| IC606 | C - 12 | Q701 | F - 12 |
| IC701 | F - 13 | Q702 | E - 12 |
| | | Q731 | D - 12 |
| IC731 | D - 13 | | |
| IC751 | C - 14 | Q751 | F - 12 |

( ) : E, AUS, EA, MX, MY, SP Model

**Note:**

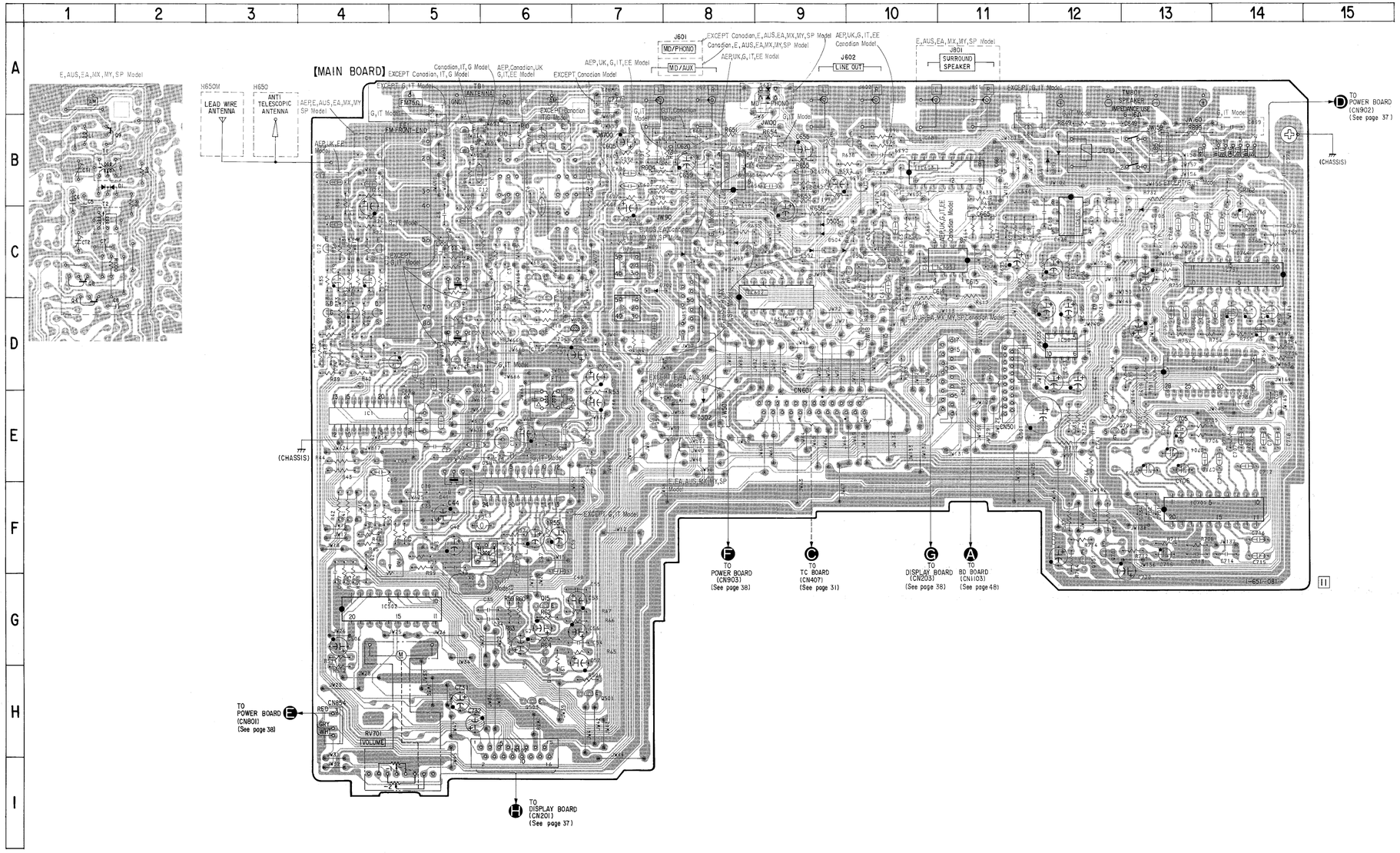
- ○— : parts extracted from the component side.
- ▒▒▒ : Pattern on the side which is seen.

- CA : Canadian
  EA : Saudi Arabia
  EE : East European
  IT : Italian
  AUS : Australian
  G : German
  MA : Malaysia
  SP : Singapore
  MX : Mexican

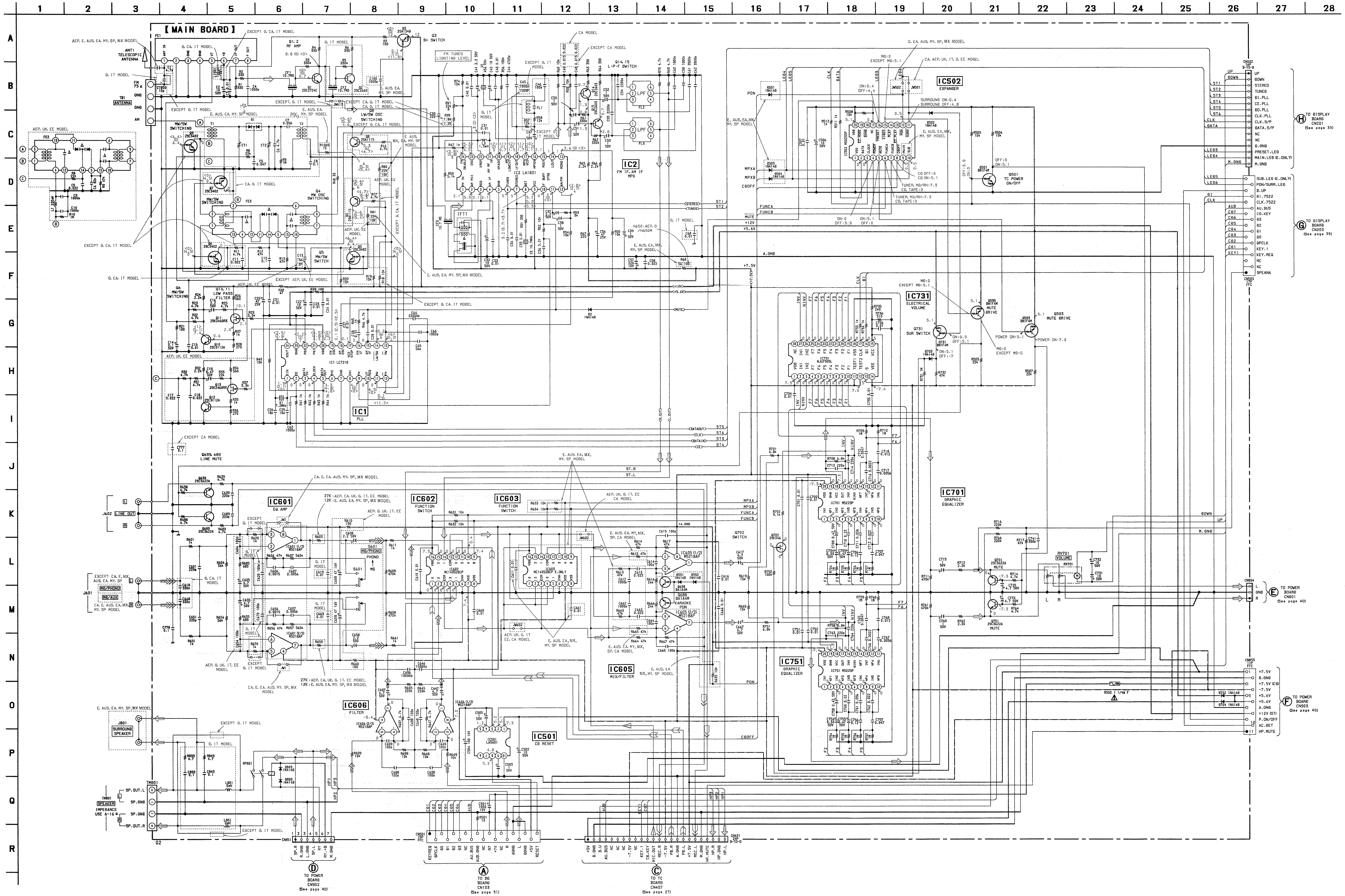


## 4-2. PRINTED WIRING BOARDS – MAIN SECTION –

● Refer to page 35 for Semiconductor Lead Layouts.

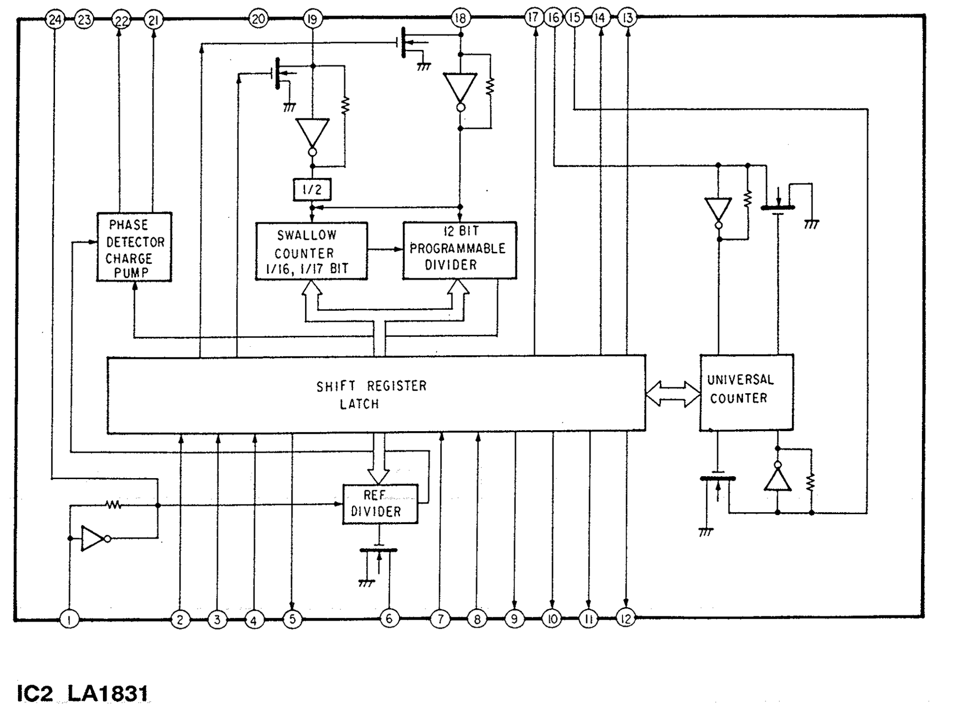


## 4-3. SCHEMATIC DIAGRAM – MAIN SECTION –

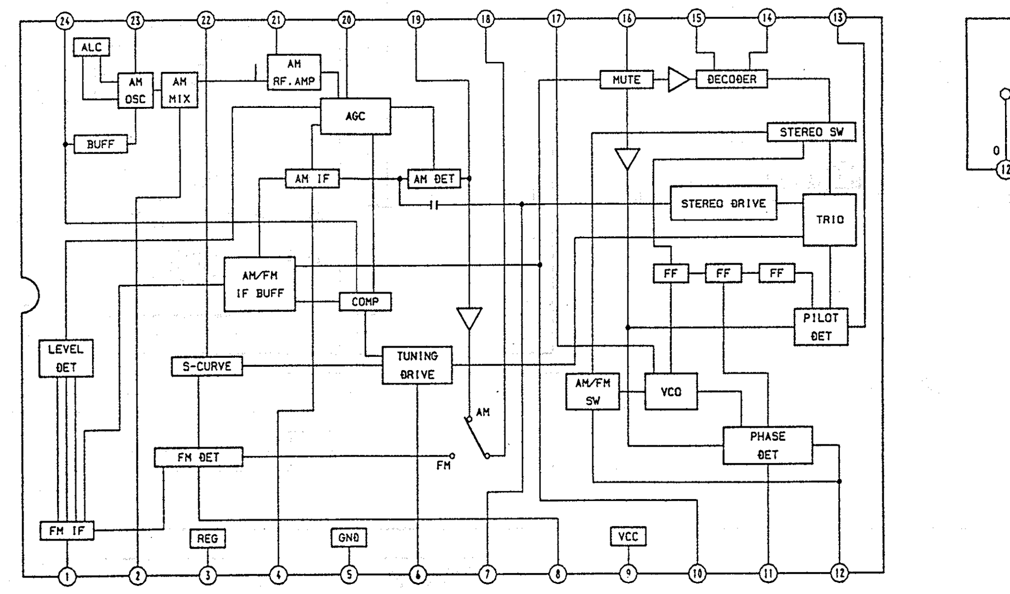

[MAIN BOARD]
IC1 PLL
IC2 FM IF, AM IF MPX
IC502 EXPANDER
IC731 ELECTRICAL VOLUME
IC601 EQ AMP
IC602 FUNCTION SWITCH
IC603 FUNCTION SWITCH
IC605 MIX/FILTER
IC606 FILTER
IC501 CD RESET
IC701 GRAPHIC EQUALIZER
IC751 GRAPHIC EQUALIZER
TO DISPLAY BOARD CN201 (See page 39)
TO DISPLAY BOARD CN203 (See page 39)
TO POWER BOARD CN801 (See page 40)
TO POWER BOARD CN903 (See page 40)
TO POWER BOARD CN902 (See page 40)
TO BD BOARD CN103 (See page 51)
TO TC BOARD CN407 (See page 27)

## • IC BLOCK DIAGRAMS – MAIN SECTION –

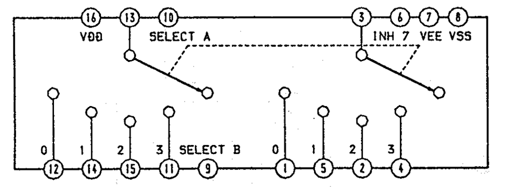
### IC1 LC7218



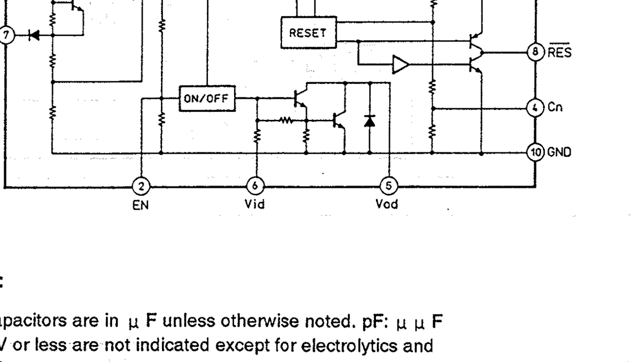

### IC2 LA1831



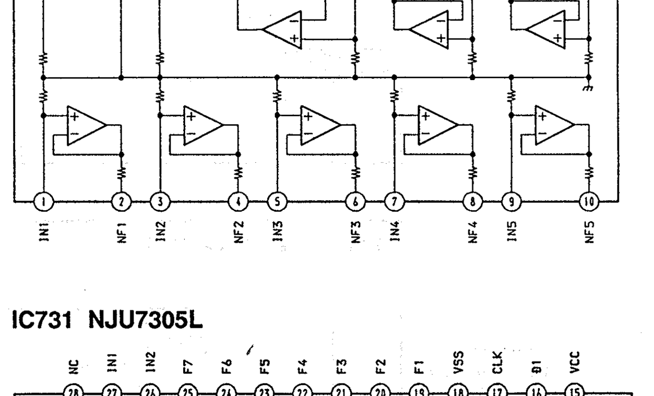

### IC602, 603 MC14052BCP




### IC501 LA5601




### IC701, 751 M5229P




## Note :

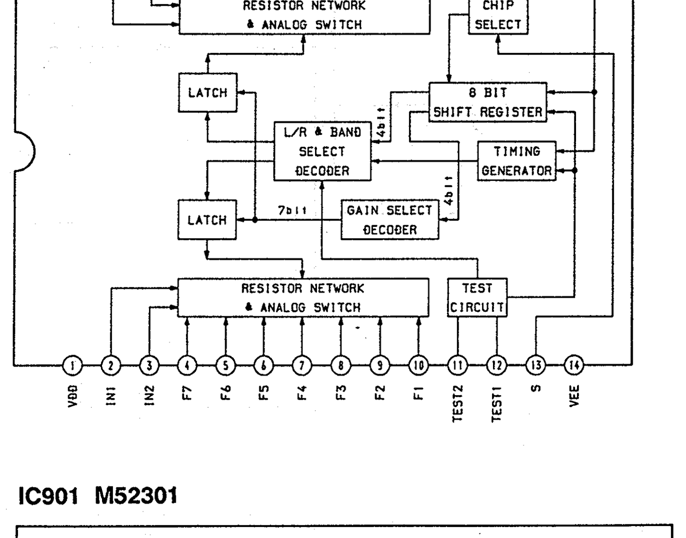
- All capacitors are in μ F unless otherwise noted. pF: μ μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.

| Note : | Note : |
| --- | --- |
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié. |

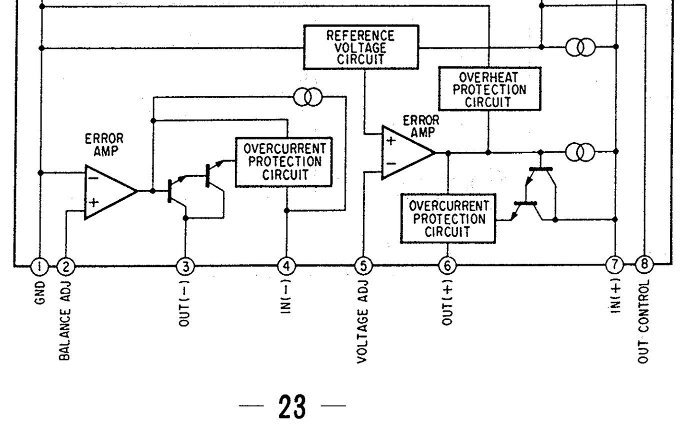
- ▬ : B+ Line
- ▬ ▬ ▬ : B – Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal ( detuned ) conditions.
  - no mark : FM (RADIO SECTION)
  - ( ) : AM (MW) (RADIO SECTION)
  - 〈 〉 : LW/LW (RADIO SECTION)
  - no mark : PLAYBACK (AUDIO SECTION)
  - ( ) : REC (AUDIO SECTION)
- Voltages are taken with a VOM ( Input impedance 10M Ω ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  - ⇨ : FM
  - : PB ( DECK A )
  - : REC ( DECK B )
  - ▷ : MIC
  - : CD
  - : PHONO

- CA : Canadian
- EA : Saudi Arabia
- EE : East European
- IT : Italian
- AUS : Australian
- G : German
- MA : Malaysia
- SP : Singapore
- MX : Mexican

### IC731 NJU7305L

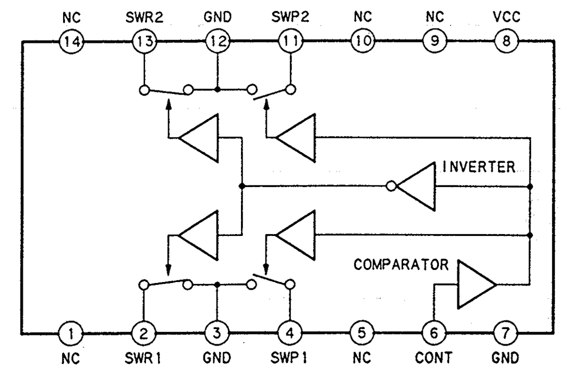



### IC901 M52301

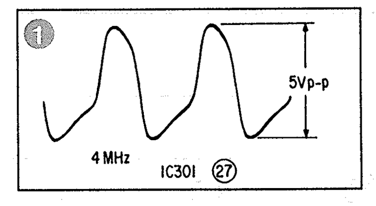


## • IC BLOCK DIAGRAMS – DECK SECTION –

IC31B μPC1330GR




## • WAVEFORMS




**Note :**

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.

| Note : | Note : |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié. |

- ▬▬ : B+ Line
- ▬ ▬ ▬ : B – Line
- Voltage and waveforms are dc with respect to ground under no-signal ( detuned ) conditions.
  no mark : PLAYBACK (AUDIO SECTION)
  ( ) : REC (AUDIO SECTION)
- Voltages are taken with a VOM ( Input impedance 10M Ω ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.

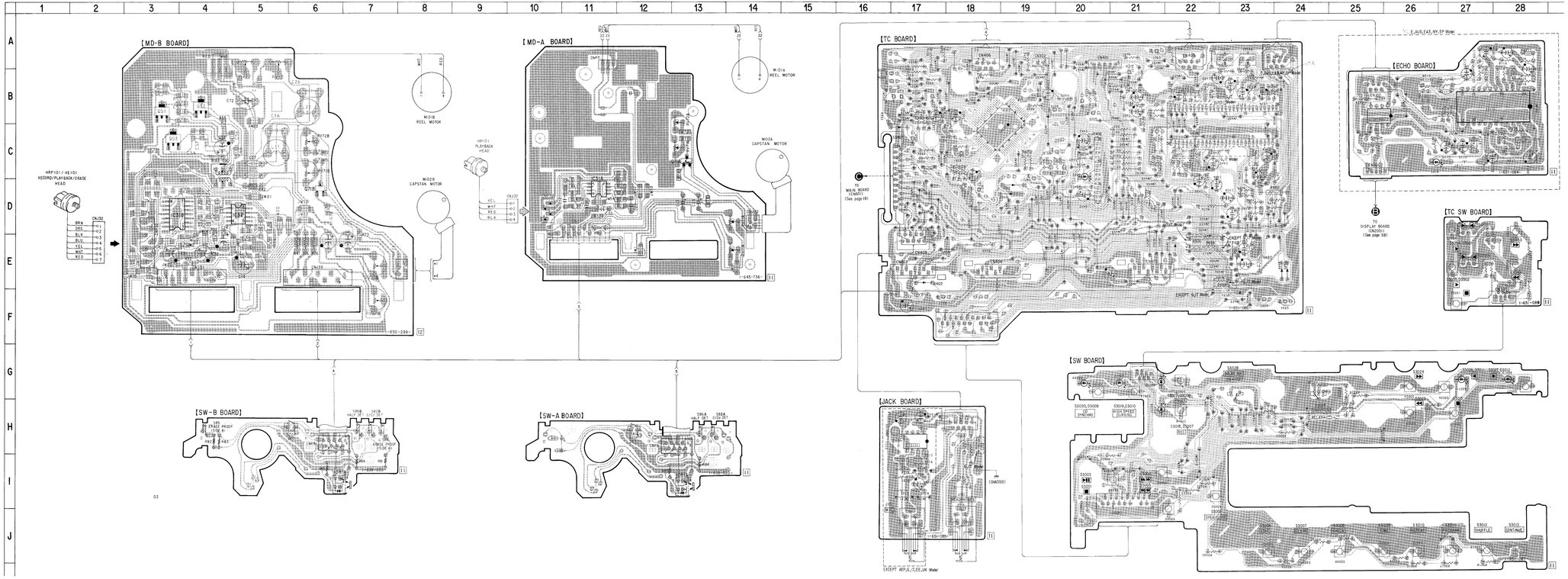
- Signal path.
  ⇨ : FM ⪢ : PB ( DECK A ) ⇨⪢ : REC ( DECK B )
  ▭ : PB ( DECK B ) ▷ : MIC

- CA : Canadian
- EA : Saudi Arabia
- EE : East European
- IT : Italian
- AUS : Australian
- G : German
- MA : Malaysia
- SP : Singapore
- MX : Mexican

## 4-4. SCHEMATIC DIAGRAM – DECK SECTION –

● Refer to page 35 for Semiconductor Lead Layouts.






● SEMICONDUCTOR LOCATION

| Ref. No. | Location | Ref. No. | Location |
|---|---|---|---|
| D101 | C - 26 | IC401 | C - 23 |
| D301 | D - 19 | IC402 | C - 20 |
| D302 | D - 19 | | |
| D303 | C - 17 | | |
| D381 | C - 20 | Q51 | B - 3 |
| | | Q52 | B - 4 |
| D401 | E - 22 | Q53 | C - 3 |
| D402 | E - 17 | Q71A | C - 13 |
| D498 | E - 24 | Q71B | D - 6 |
| D499 | E - 24 | | |
| D3007 | H - 21 | Q301 | A - 21 |
| | | Q302 | C - 17 |
| D3008 | G - 21 | Q303 | B - 20 |
| D3009 | G - 20 | Q304 | B - 20 |
| D3010 | G - 21 | Q305 | B - 16 |
| D3011 | G - 27 | | |
| D3012 | D - 28 | Q306 | B - 16 |
| | | Q307 | B - 17 |
| D3051 | D - 27 | Q308 | B - 17 |
| D3052 | E - 27 | Q309 | B - 17 |
| | | Q310 | C - 20 |
| IC31A | D - 11 | Q311 | D - 19 |
| IC31B | D - 3 | Q312 | D - 18 |
| IC32 | D - 5 | Q394 | F - 24 |
| IC81A | I - 13 | Q397 | F - 23 |
| IC81B | I - 6 | Q401 | B - 21 |
| IC101 | B - 25 | Q411 | F - 17 |
| IC103 | B - 27 | Q412 | C - 20 |
| IC151 | H - 17 | Q413 | C - 19 |
| IC301 | C - 19 | Q451 | C - 21 |
| IC302 | C - 18 | | |

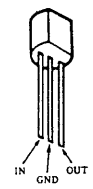
Note:

- ○—: parts extracted from the component side.
- ▒▒: Pattern on the side which is seen.
- □: Chip components extracted from the rear side.

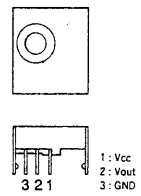
- CA : Canadian
- EA : Saudi Arabia
- EE : East European
- IT : Italian
- AUS : Australian
- G : German
- MA : Malaysia
- SP : Singapore
- MX : Mexican

## • SEMICONDUCTOR LEAD LAYOUTS

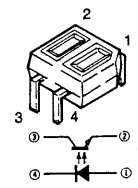
**MSM6538-01GS-VKR1**
**RST600E-T**



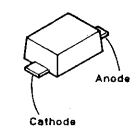

**GP1U90XB**



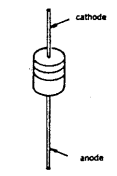

**NJL5165K-B(H1)**



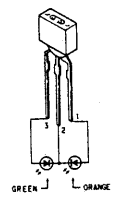

**MA-8043-M**



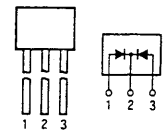

**RD6.2ESB2**
**UZP-7.5B**
**11ES2**



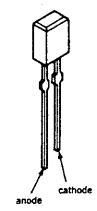

**SML1260S**



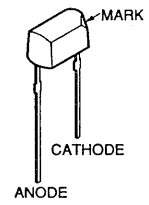

**KV1560N**



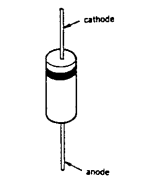

**SEL4425GM-TP7**



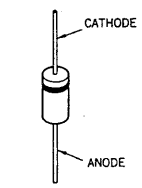

**SEL5220S-TP**
**SEL5420S-TP**
**SML1460E**



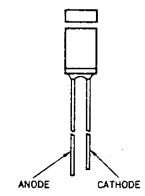

**UZP-8.2B**



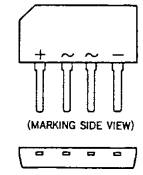

**UZ-5.6BS-TP**
**UZ-30BSD-TP**
**UZ-12BSC-TP**
**1N4148M**



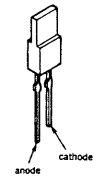

**SEL5920A**



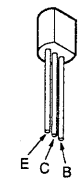

**RBA-402**



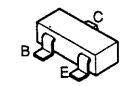

**LED-SX-TP**



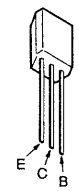

**2SB1068-K**
**2SC1841-PAFAEA**
**2SC2001TP-K1K2**
**2SC3112**
**2SD1616-K**



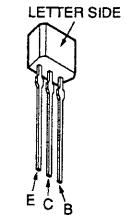

**2SA1162-G**
**2SC3395**
**2SC4154**



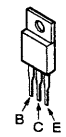

**DTA114ES**
**DTA124ES**
**DTA144ES**
**DTC114ES**
**DTC144ES**
**2SC2603-EF**
**2SC3622A-LK**
**2SC26690Y-TPE4**



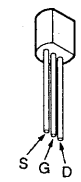

**2SA1175-HFE**
**2SC403SP-51**




**2SB1094-LK**
**2SB1375-LC**
**2SD1406-YGR**
**2SD2012**
**2SD2012-LC**




**2SK246-GR3**



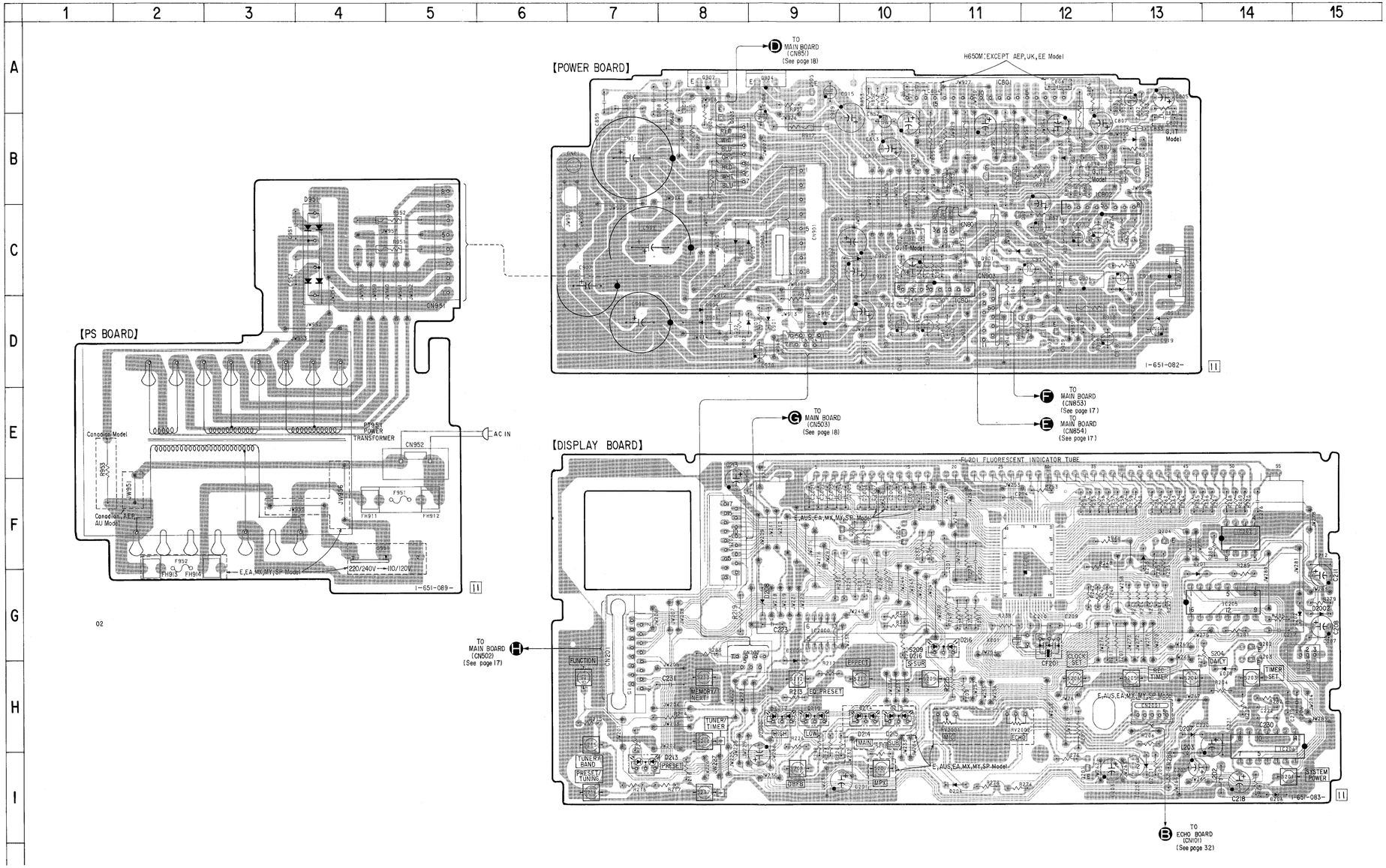
● Refer to page 35 for Semiconductor Lead Layouts.

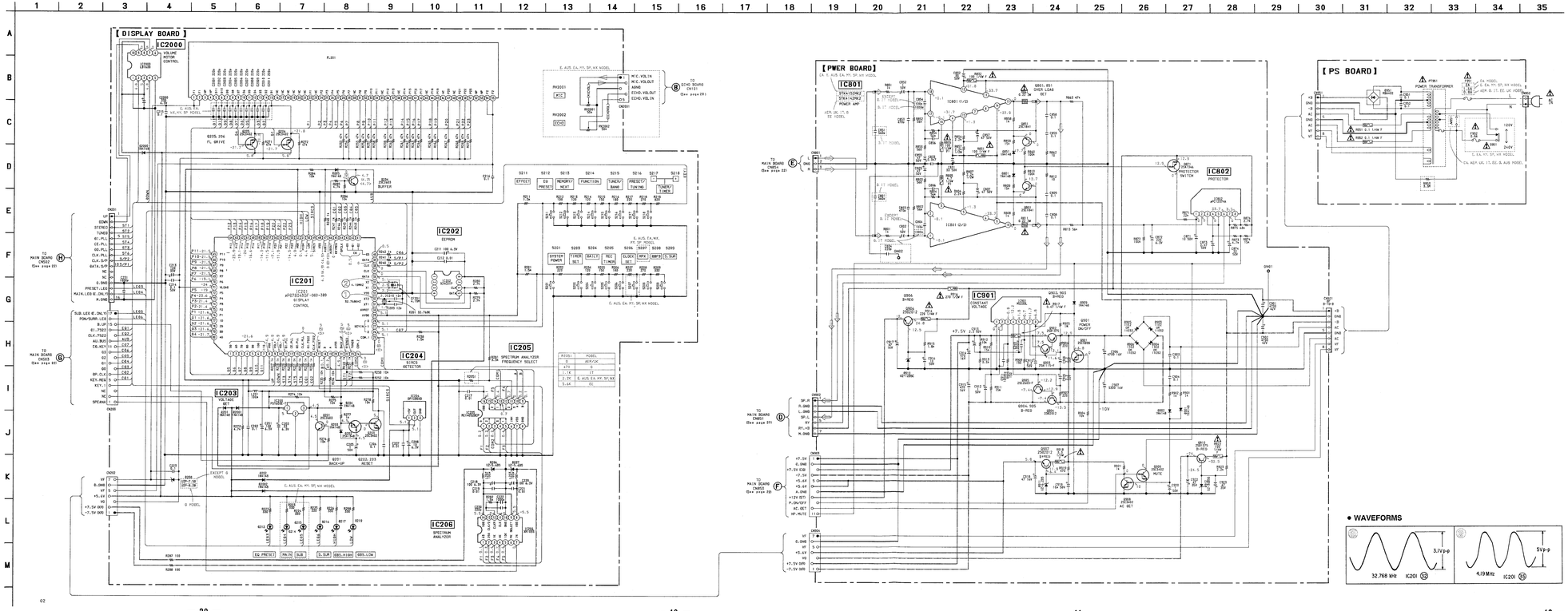
## ● SEMICONDUCTOR LOCATION

| Ref. No. | Location | Ref. No. | Location |
|---|---|---|---|
| D201 | G - 13 | IC206 | H - 14 |
| D202 | G - 15 | IC801 | A - 11 |
| D203 | H - 14 | IC802 | B - 12 |
| D204 | I - 11 | IC901 | C - 11 |
| D205 | F - 13 | IC2000 | G - 9 |
| D206 | I - 14 | | |
| D207 | H - 13 | Q201 | I - 12 |
| D208 | G - 9 | Q202 | G - 14 |
| D213 | I - 7 | Q203 | G - 14 |
| D214 | H - 10 | Q204 | F - 13 |
| | | Q205 | F - 10 |
| D215 | H - 10 | | |
| D216 | G - 11 | Q206 | F - 10 |
| D217 | H - 9 | Q801 | B - 11 |
| D219 | H - 9 | Q851 | B - 13 |
| D801 | B - 12 | Q871 | C - 11 |
| | | Q901 | C - 11 |
| D851 | B - 13 | | |
| D901 | D - 9 | Q902 | A - 8 |
| D902 | D - 8 | Q903 | B - 8 |
| D903 | C - 8 | Q904 | A - 9 |
| D904 | D - 8 | Q905 | A - 9 |
| | | Q906 | C - 12 |
| D905 | C - 8 | | |
| D906 | D - 8 | Q907 | C - 13 |
| D909 | C - 11 | Q908 | D - 12 |
| D910 | C - 13 | Q909 | D - 12 |
| D911 | D - 13 | Q910 | D - 9 |
| D912 | B - 10 | | |
| D951 | C - 4 | | |
| D2000 | G - 9 | | |
| D2001 | I - 13 | | |
| D2002 | G - 15 | | |
| IC201 | F - 12 | | |
| IC202 | F - 14 | | |
| IC203 | I - 13 | | |
| IC204 | G - 15 | | |
| IC205 | G - 14 | | |

**Note:**

- ○— : parts extracted from the component side.
- ▒▒▒ : Pattern on the side which is seen.
- CA : Canadian
  EA : Saudi Arabia
  EE : East European
  IT : Italian
  AUS : Australian
  G : German
  MA : Malaysia
  SP : Singapore
  MX : Mexican











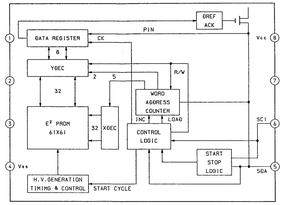

## • WAVEFORMS



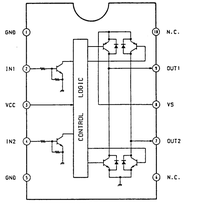



## • IC BLOCK DIAGRAMS – DISPLAY SECTION –

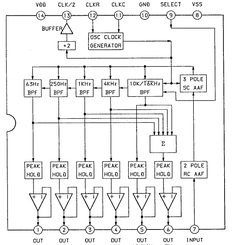
### IC202 X24C01P



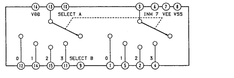

### IC2000 LB1638



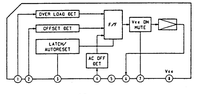

### IC206 XR1093




### IC205 MC14052BCP




### IC802 μPC1237HA




**Note :**

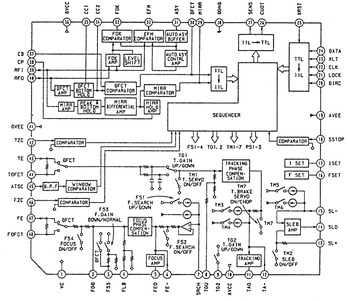
- All capacitors are in μ F unless otherwise noted. pF: μ μ F
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ▲ : nonflammable resistor.
- ▲ : fusible resistor.

| Note : | Note : |
|---|---|
| The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié. |

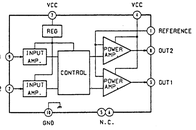
- ▭▭▭ : B+ Line
- ▭ ▭ ▭ : B– Line
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : FM (RADIO SECTION)
  no mark : PLAYBACK (AUDIO SECTION)
- Voltages are taken with a VOM ( Input impedance 10M Ω ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  — : FM
- CA : Canadian
  EA : Saudi Arabia
  EE : East European
  IT : Italian
  AUS : Australian
  G : German
  MA : Malaysia
  SP : Singapore
  MX : Mexican

## ● IC BLOCK DIAGRAMS – CD SECTION –

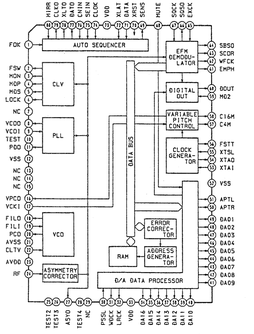
### IC101 CXA1372AQ



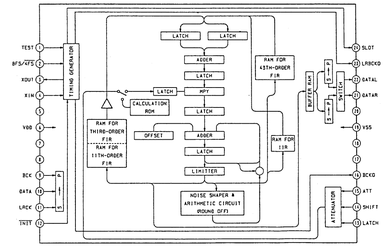

### IC103 M54641FP




### IC201 CXD2500BQ




### IC203 MSM6538-01GS-VKR1




## ● WAVEFORMS

| | | | |
|---|---|---|---|
| ① | 1.2Vp-p | ⑰ | 5.0Vp-p |
| | IC101 ㊽ PLAY | | IC203 ⑪ |
| ② | 2.5V | ⑯ | 5.5Vp-p |
| | APPROX 500mVp-p | | 480nsec |
| | IC101 ㊸ PLAY | | IC203 ⑱ |
| ③ | 2.5V | ㉑ | 5.8Vp-p |
| | APPROX 100mVp-p | | 240nsec |
| | IC101 ㊶ PLAY | | IC201 ㊸ PLAY |
| ④ | 5Vp-p | ⑩ | 5.2V |
| | 4MHz | | 136 µsec |
| | IC202 ⑧ | | IC201 ㊹ |
| ⑤ | 4.2Vp-p | ⑮ | 5Vp-p |
| | 4MHz | | 16MHz |
| | IC202 ⑨ | | IC203 ⑨ |
| ⑥ | 2.2Vp-p | ⑫ | 5Vp-p |
| | 7.5 µsec | | 16MHz |
| | IC201 ④ PLAY | | IC203 ④ |



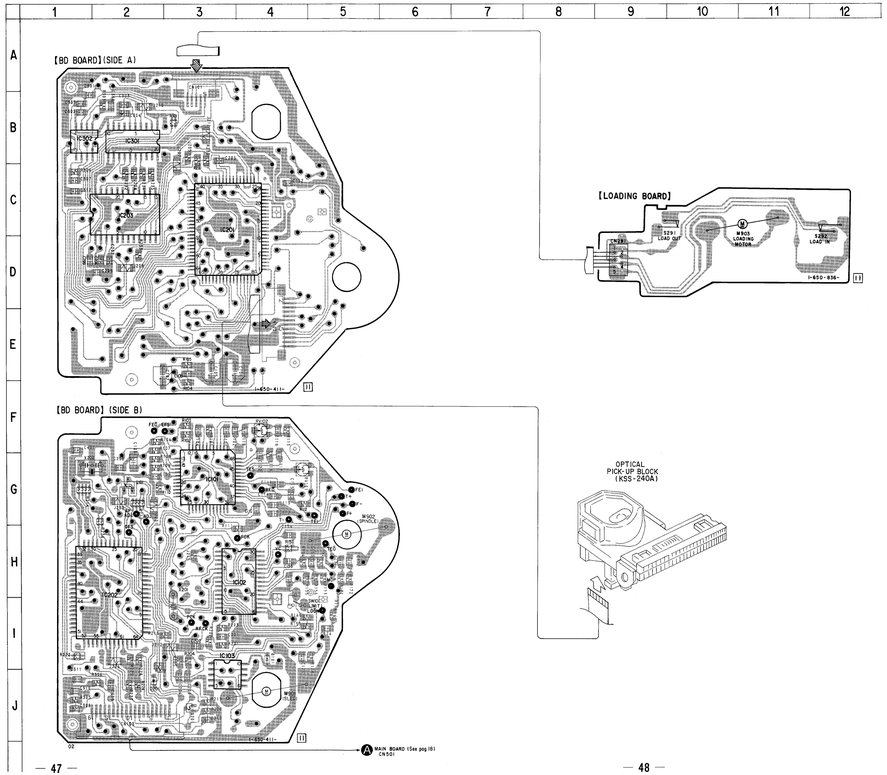


## 4-8. PRINTED WIRING BOARDS – CD SECTION –

● Refer to page 35 for Semiconductor Lead Layouts.

### ● SEMICONDUCTOR LOCATION

| Ref. No. | Location |
|---|---|
| D101 | I - 4 |
| D202 | J - 2 |
| IC101 | G - 3 |
| IC102 | H - 3 |
| IC103 | I - 3 |
| IC201 | C - 3 |
| IC202 | H - 2 |
| IC203 | C - 2 |
| IC301 | B - 2 |
| IC302 | B - 1 |
| Q101 | G - 2 |
| Q201 | J - 3 |

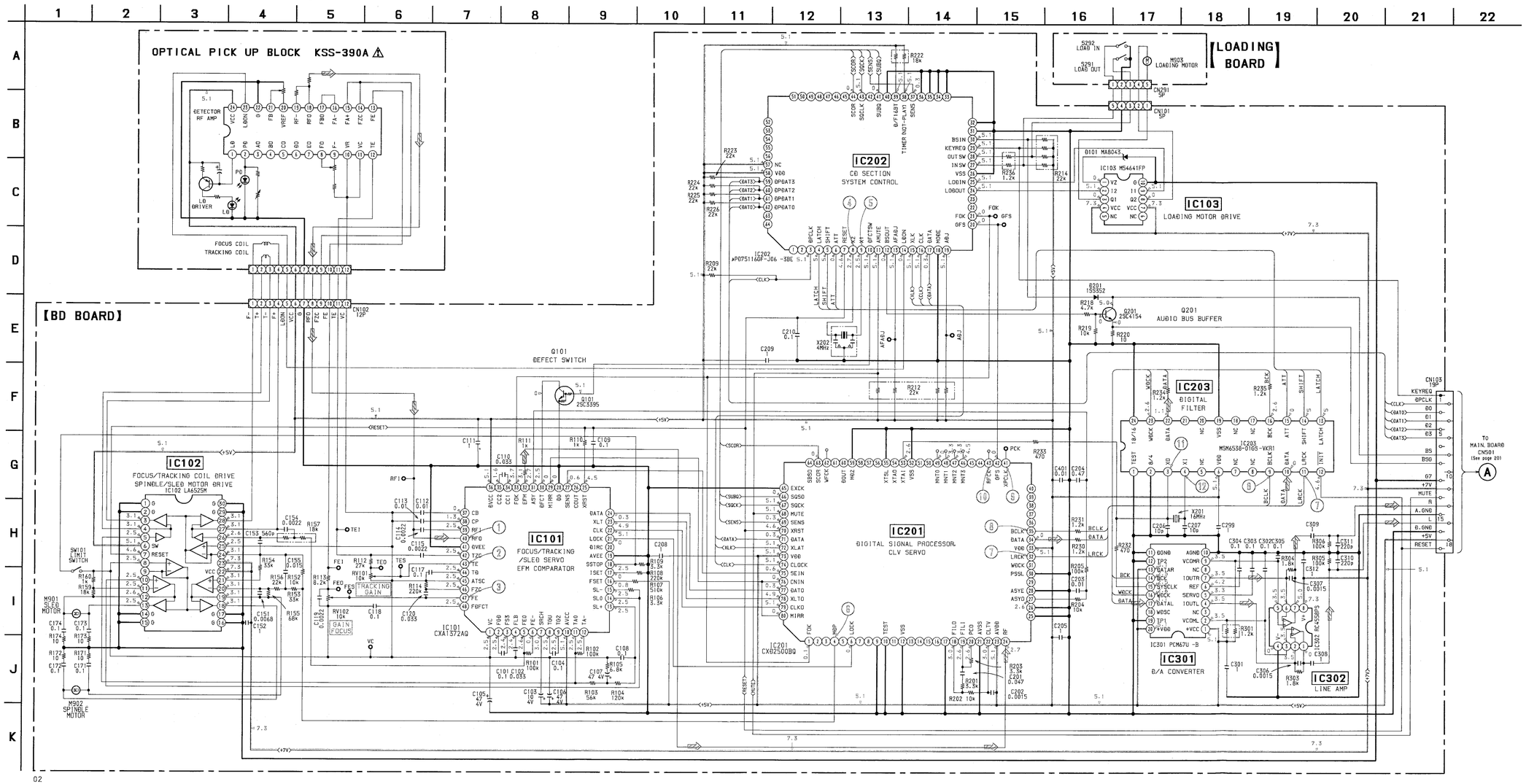



**Note:**

- ● : Through hole.
- ▨ : Pattern of the rear side.
- □ : Chip components extracted from the rear side.

## 4-9. SCHEMATIC DIAGRAM – CD SECTION –

● Refer to page 46 for Waveform.




**Note :**

- All capacitors are in μ F unless otherwise noted. pF: μ μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.

| **Note :** | **Note :** |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié. |

- : B+ Line
- : B – Line
- : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : STOP
- Voltages are taken with a VOM ( input impedance 10M Ω ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  : CD

# SECTION 5
# EXPLODED VIEWS

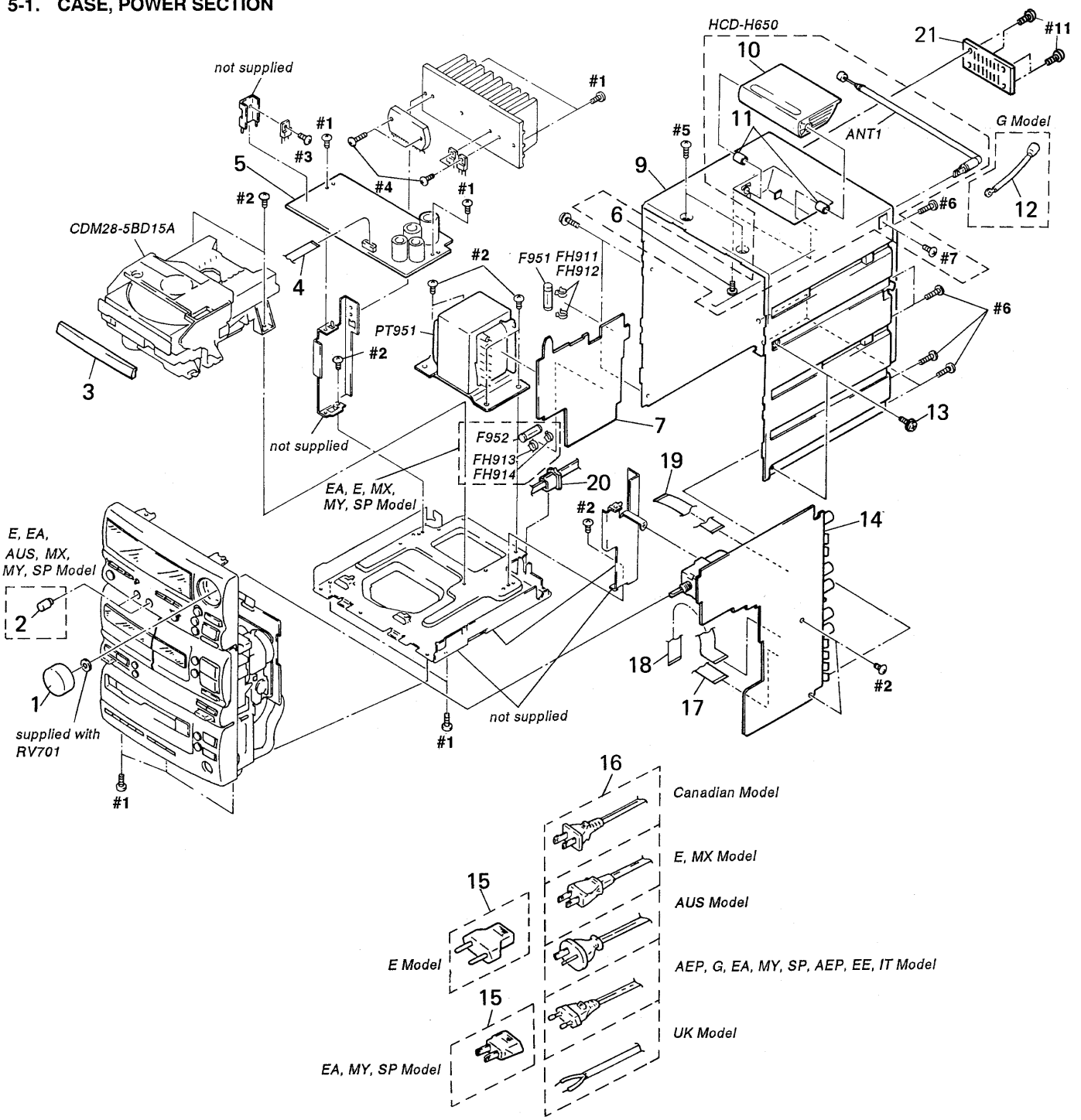
NOTE :

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Color indication of Appearance Parts Example :
  KNOB, BALANCE (WHITE)....(RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware ( # mark) list and accessories and packing materials are given in the last of this parts list.
- AUS : Australian EA : Saudi Arabia
  G : German EE : East European
  IT : Italian MY : Malaysia
  MX : Mexican SP : Singapore

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

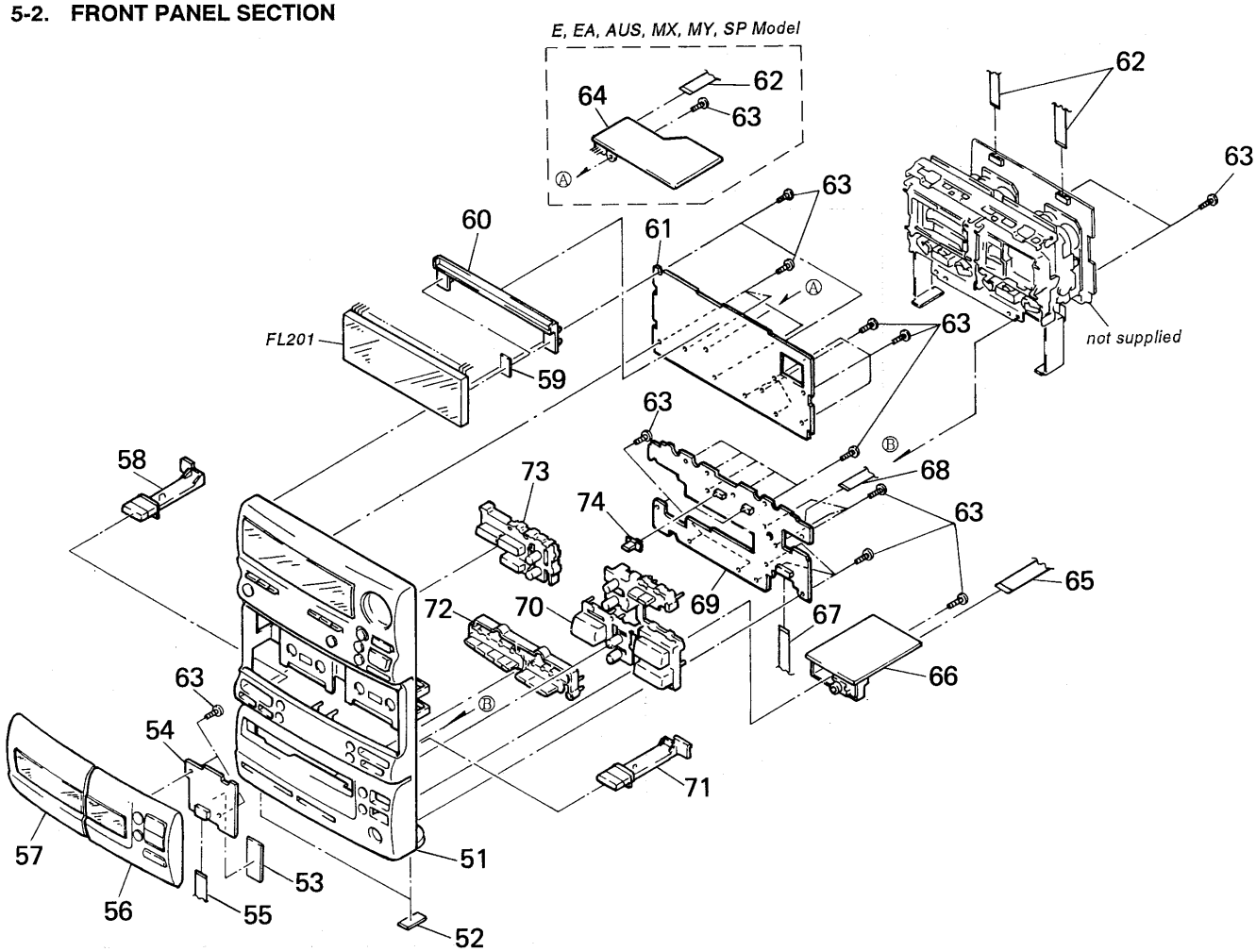
## 5-1. CASE, POWER SECTION



| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 1 | 4-964-858-01 | KNOB (V) | |
| 2 | 4-963-744-01 | KNOB(E, AUS, EA, MX, MY, SP) | |
| 3 | 4-963-286-11 | PANEL, LOADING | |
| 4 | 1-751-965-21 | WIRE (FLAT TYPE) (7 CORE) | |
| * 5 | A-4365-992-A | POWER BOARD, COMPLETE(Canadian) | |
| * 5 | A-4369-000-A | POWER BOARD, COMPLETE(AEP, EE) | |
| * 5 | A-4369-008-A | POWER BOARD, COMPLETE(G, IT) | |
| * 5 | A-4369-020-A | POWER BOARD, COMPLETE(UK) | |
| * 5 | A-4369-044-A | POWER BOARD, COMPLETE(E, AUS, EA, MX, MY, SP) | |
| 6 | 4-951-620-01 | SCREW (2.6X8), +BVTP | |
| * 7 | 1-651-089-11 | PS BOARD | |
| * 9 | 4-963-306-31 | CASE(H650M) | |
| * 9 | 4-964-234-01 | CASE (FH) (E, EA, MX, MY, SP) | |
| * 9 | 4-964-234-11 | CASE (FH) (H650:AEP, G) | |
| * 9 | 4-964-234-21 | CASE (FH) (AUS) | |
| * 10 | 4-963-673-01 | HANDLE(H650) | |
| * 11 | 4-963-672-01 | COLLAR(H650) | |
| 12 | 1-501-594-21 | ANTENNA (FM) (G) | |
| 13 | 3-704-366-01 | SCREW (CASE) (M3X8) | |
| * 14 | A-4365-991-A | MAIN BOARD, COMPLETE(Canadian) | |
| * 14 | A-4365-999-A | MAIN BOARD, COMPLETE(AEP) | |
| * 14 | A-4369-007-A | MAIN BOARD, COMPLETE(G, IT) | |
| * 14 | A-4369-019-A | MAIN BOARD, COMPLETE(UK) | |
| * 14 | A-4369-043-A | MAIN BOARD, COMPLETE(E, AUS, EA, MX, MY, SP) | |
| * 14 | A-4369-056-A | MAIN BOARD, COMPLETE(EE) | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| ⚠15 | 1-569-007-11 | ADAPTER, CONVERSION 2P(E) | |
| ⚠15 | 1-569-008-11 | ADAPTER, CONVERSION 2P(EA, MY, SP) | |
| ⚠16 | 1-575-651-11 | CORD, POWER(AEP, EA, MY, SP, EE) | |
| ⚠16 | 1-575-653-11 | CORD, POWER(E, MX) | |
| ⚠16 | 1-590-042-11 | CORD, POWER (WITH CORE) (G, IT) | |
| ⚠16 | 1-690-609-11 | CORD, POWER(Canadian) | |
| ⚠16 | 1-696-570-21 | CORD, POWER(UK) | |
| ⚠16 | 1-696-848-21 | CORD, POWER(AUS) | |
| 17 | 1-751-960-21 | WIRE (FLAT TYPE) (19 CORE) | |
| 18 | 1-765-142-21 | WIRE (FLAT TYPE) (17 CORE) | |
| 19 | 1-751-962-11 | WIRE (FLAT TYPE) (11 CORE) | |
| * 20 | 3-703-244-00 | BUSHING (2104), CORD(EXCEPT E, MX) | |
| * 20 | 3-703-571-11 | BUSHING (S) (4516), CORD(E, MX) | |
| 21 | 4-966-056-01 | SHEET, PROTECTION (FH) (AEP, MX, MY, SP) | |
| ANT1 | 1-501-321-51 | ANTENNA, TELESCOPIC(H650) | |
| ⚠F951 | 1-532-215-00 | FUSE(T800mA/250V) (EXCEPT Canadian) | |
| ⚠F951 | 1-576-104-11 | FUSE(2A/250V) (Canadian) | |
| ⚠F952 | 1-532-259-00 | FUSE(T1.6A/250V) (E, EA, MX, MY, SP) | |
| * FH911 | 1-533-293-11 | FUSE HOLDER | |
| * FH912 | 1-533-293-11 | FUSE HOLDER | |
| * FH913 | 1-533-293-11 | FUSE HOLDER(E, EA, MX, MY, SP) | |
| * FH914 | 1-533-293-11 | FUSE HOLDER(E, EA, MX, MY, SP) | |
| ⚠PT951 | 1-423-966-11 | TRANSFORMER, POWER(Canadian) | |
| ⚠PT951 | 1-423-967-11 | TRANSFORMER, POWER(AEP, G, IT, EE) | |
| ⚠PT951 | 1-423-968-11 | TRANSFORMER, POWER(AUS, UK) | |
| ⚠PT951 | 1-423-969-11 | TRANSFORMER, POWER(E, EA, MX, MY, SP) | |

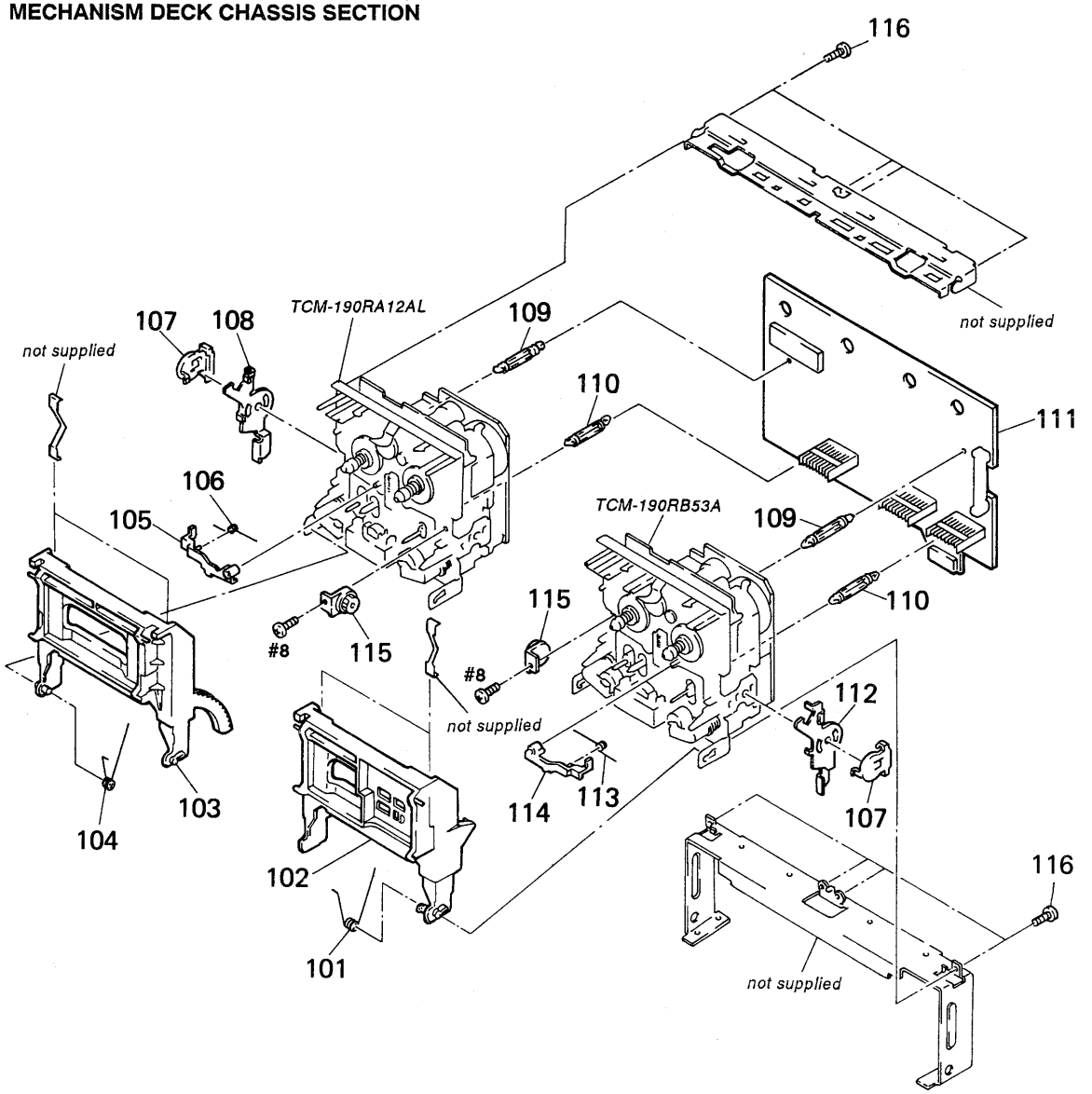
## 5-2. FRONT PANEL SECTION




| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 51 | X-4944-408-1 | PANEL ASSY, FRONT (E, AUS, EA, MX, MY, SP) | |
| 51 | X-4944-409-1 | PANEL ASSY, FRONT (H650: AEP, G) | |
| 51 | X-4944-433-1 | PANEL ASSY, FRONT (Canadian) | |
| 51 | X-4944-436-1 | PANEL ASSY, FRONT (H650M: AE, UK, IT, EE) | |
| 52 | 4-930-336-81 | FOOT (FELT) | |
| 53 | 4-964-315-11 | SHEET, PROTECTION | |
| * 54 | 1-651-088-11 | TC-SW BOARD | |
| 55 | 1-751-964-11 | WIRE (FLAT TYPE) (7 CORE) | |
| 56 | X-4944-411-1 | LID (B) ASSY, CASSETTE | |
| 57 | X-4944-410-1 | LID (A) ASSY, CASSETTE | |
| 58 | 4-965-452-01 | BUTTON (E) (L) | |
| * 59 | 4-932-810-11 | CUSHION (FL) | |
| 60 | 4-963-277-11 | HOLDER (FL) | |
| * 61 | A-4365-998-A | DISPLAY BOARD, COMPLETE (Canadian) | |
| * 61 | A-4369-006-A | DISPLAY BOARD, COMPLETE (AEP) | |
| * 61 | A-4369-014-A | DISPLAY BOARD, COMPLETE (G) | |
| * 61 | A-4369-026-A | DISPLAY BOARD, COMPLETE (UK) | |
| * 61 | A-4369-050-A | DISPLAY BOARD, COMPLETE (E, AUS, EA, MX, MY, SP) | |
| * 61 | A-4369-052-A | DISPLAY BOARD, COMPLETE (IT) | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| * 61 | A-4369-057-A | DISPLAY BOARD, COMPLETE (EE) | |
| 62 | 1-590-241-11 | WIRE, FLAT TYPE (7 CORE) | |
| 63 | 4-951-620-01 | SCREW (2.6X8), +BVTP | |
| * 64 | A-4369-051-A | ECHO BOARD, COMPLETE (E, AUS, EA, MX, MY, SP) | |
| 65 | 1-751-961-21 | WIRE (FLAT TYPE) (9 CORE) | |
| * 66 | 1-651-085-11 | JACK BOARD | |
| 67 | 1-751-963-11 | WIRE (FLAT TYPE) (18 CORE) | |
| 68 | 1-751-964-11 | WIRE (FLAT TYPE) (7 CORE) | |
| * 69 | A-4365-995-A | SW BOARD, COMPLETE (Canadian) | |
| * 69 | A-4369-003-A | SW BOARD, COMPLETE (AEP, EE) | |
| * 69 | A-4369-011-A | SW BOARD, COMPLETE (G, IT) | |
| * 69 | A-4369-023-A | SW BOARD, COMPLETE (UK) | |
| * 69 | A-4369-047-A | SW BOARD, COMPLETE (E, AUS, EA, MX, MY, SP) | |
| 70 | X-4944-435-1 | BUTTON (M2) ASSY | |
| 71 | 4-965-453-01 | BUTTON (E) (R) | |
| 72 | 4-963-655-01 | BUTTON (CDP) | |
| 73 | X-4944-434-1 | BUTTON (M1) ASSY | |
| 74 | 4-963-284-11 | KNOB (S) | |
| FL201 | 1-517-247-11 | INDICATOR TUBE, FLUORESCENT | |

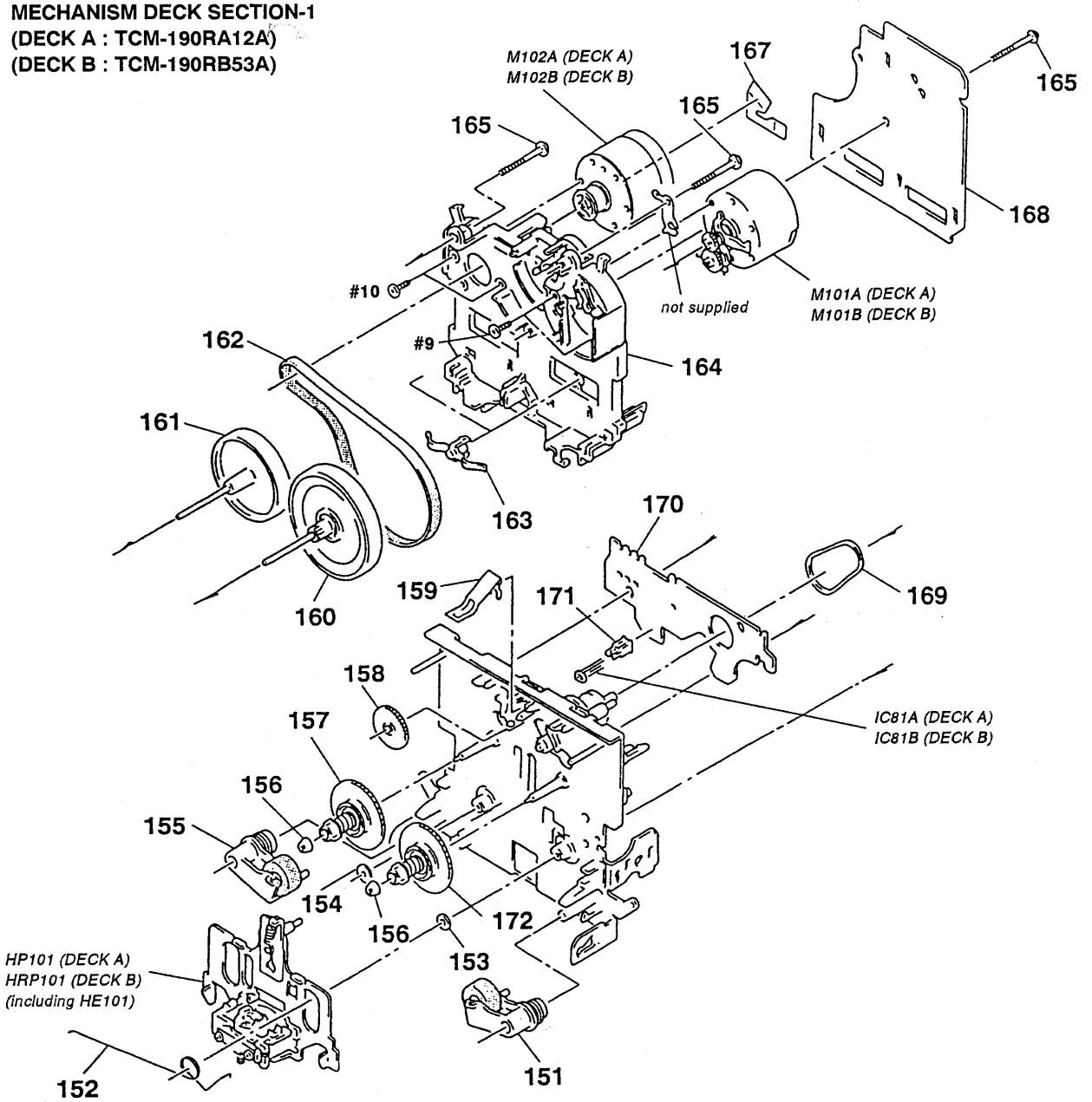
## 5-3. MECHANISM DECK CHASSIS SECTION




| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 101 | 4-959-232-11 | SPRING (R), TORSION | |
| 102 | X-4944-416-1 | HOLDER (R) ASSY, CASSETTE | |
| 103 | X-4944-415-1 | HOLDER (L) ASSY, CASSETTE | |
| 104 | 4-959-231-11 | SPRING (L), TORSION | |
| 105 | 3-354-955-01 | LEVER (EJ SAFTY LEVER L) | |
| 106 | 3-354-961-01 | SPRING (EJ SAFTY SPRING L) | |
| 107 | 3-354-957-01 | JOINT (LOCK LEVER) | |
| * 108 | 3-367-709-21 | LEVER (LOCK LEVER L) | |
| * 109 | 4-965-065-11 | HOLDER, PCB | |
| * 110 | 4-965-065-01 | HOLDER, PCB | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| * 111 | A-4365-994-A | TC BOARD, COMPLETE(Canadian) | |
| * 111 | A-4369-002-A | TC BOARD, COMPLETE(AEP, EE) | |
| * 111 | A-4369-010-A | TC BOARD, COMPLETE(G, IT) | |
| * 111 | A-4369-022-A | TC BOARD, COMPLETE(UK) | |
| * 111 | A-4369-046-A | TC BOARD, COMPLETE(E, AUS, EA, MX, MY, SP) | |
| * 112 | 3-367-710-21 | LEVER (LOCK LEVER R) | |
| 113 | 3-354-962-01 | SPRING (EJ SAFTY SPRING R) | |
| 114 | 3-354-956-01 | LEVER (EJ SAFTY LEVER R) | |
| 115 | 3-354-963-01 | DAMPER | |
| 116 | 4-951-620-01 | SCREW +BVTP 2.6×8 | |

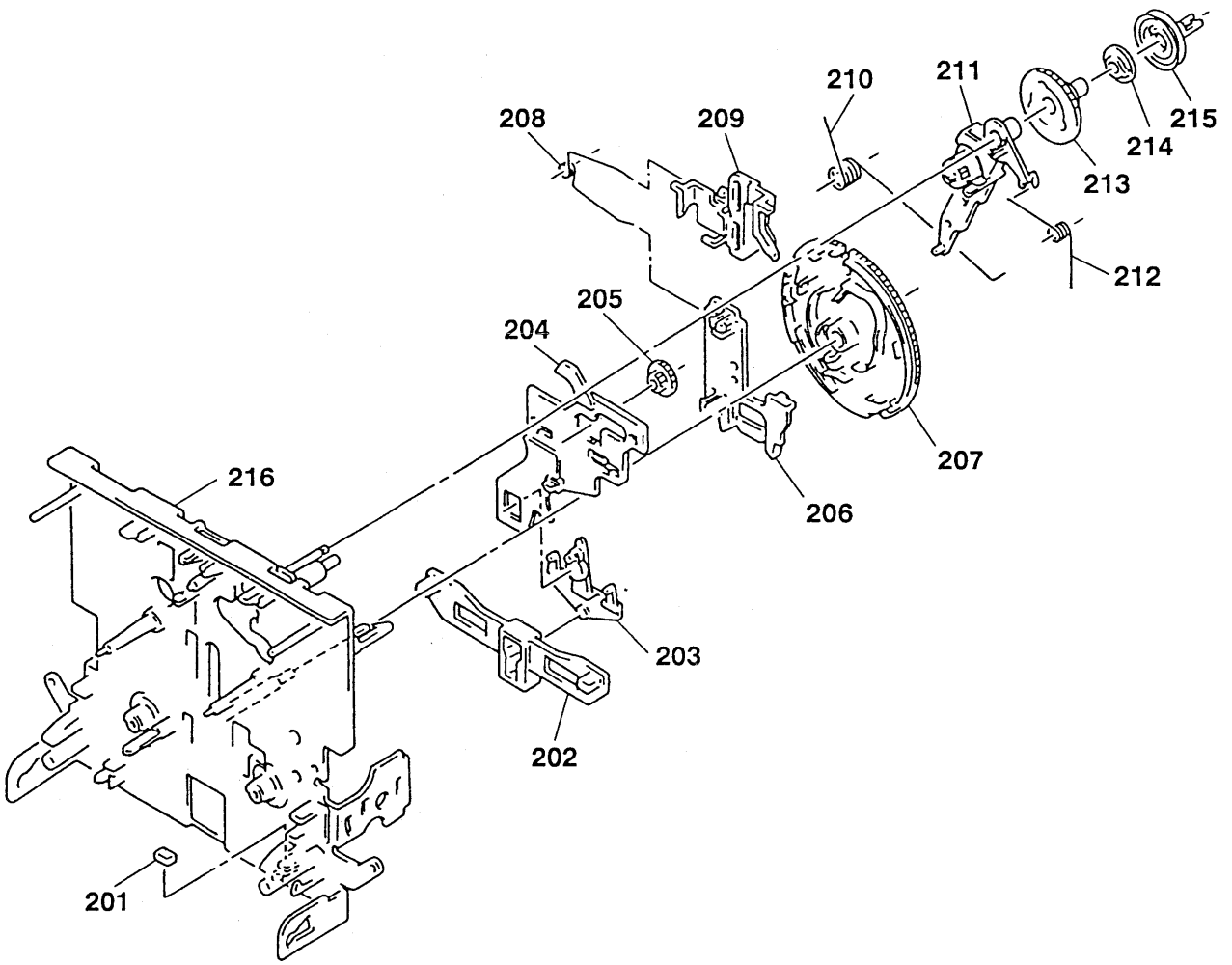
## 5-4. MECHANISM DECK SECTION-1
## (DECK A : TCM-190RA12A)
## (DECK B : TCM-190RB53A)




| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 151 | X-3366-047-1 | LEVER (PINCH F) ASSY | |
| 152 | 3-907-362-11 | SPRING, TORSION | |
| 153 | 3-356-713-01 | WASHER | |
| 154 | 3-356-714-01 | WASHER | |
| 155 | X-3366-048-1 | LEVER (PINCH R) ASSY | |
| 156 | 3-913-841-01 | CAP (REEL) | |
| 157 | X-3366-971-1 | TABLE ASSY (B), REEL | |
| 158 | 3-359-424-11 | GEAR (REV GEAR) | |
| 159 | 3-359-430-01 | SPRING(CASSETTE RETAINER),LEAF | |
| 160 | X-3367-629-1 | FLYWHEEL (FWD) ASSY | |
| 161 | X-3367-630-2 | FLYWHEEL (REV) ASSY | |
| 162 | 3-359-417-01 | BELT (FLAT), CAPSTAN | |
| 163 | 3-575-321-00 | RETAINER, THRUST, CAPSTAN | |
| 164 | 3-359-436-11 | BASE (THRUST RETAINER),FITTING | |
| 165 | 3-359-414-01 | SCREW (+PTPWH 2X23) | |

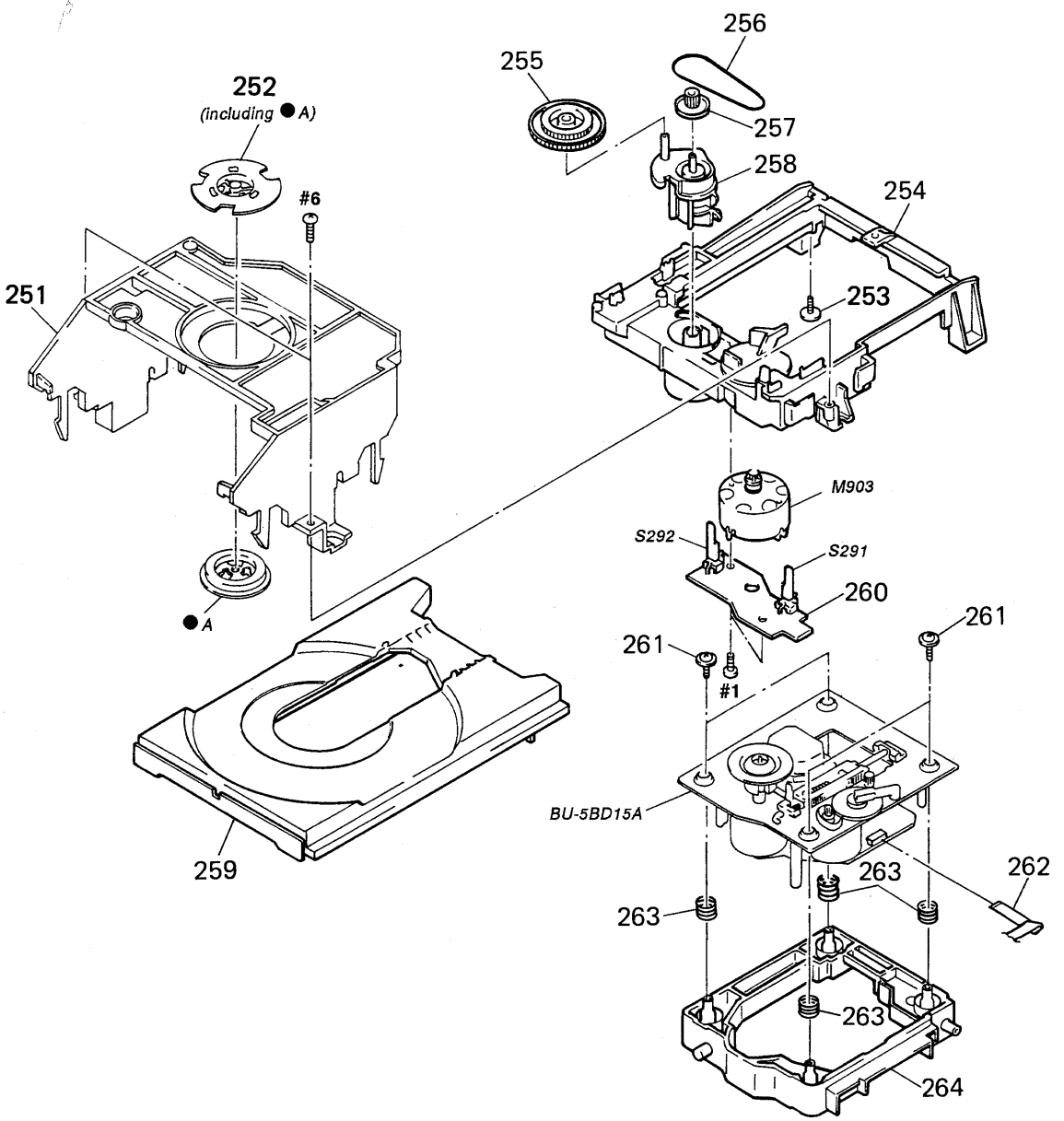
| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 167 | 1-638-983-11 | PC BOARD, MOTOR FLEXIBLE | |
| * 168 | A-2006-623-A | MD(AX)BOARD, COMPLETE (DECK A) | |
| * 168 | A-2007-134-A | MD(BX)BOARD, COMPLETE (DECK B) | |
| 169 | 3-359-466-11 | BELT (FR), SQUARE | |
| 170 | 1-638-020-11 | SW-A BOARD(DECK A) | |
| 170 | 1-638-020-11 | SW-B BOARD(DECK B) | |
| 171 | 3-343-419-01 | HOLDER(S SENSOR A) | |
| 172 | X-3366-970-1 | TABLE ASSY, REEL | |
| M101A | X-3363-501-1 | MOTOR ASSY(REEL)(DECK A) | |
| M101B | X-3363-501-1 | MOTOR ASSY(REEL)(DECK B) | |
| M102A | X-3365-377-1 | MOTOR ASSY(CAPSTAN)(DECK A) | |
| M102B | X-3365-377-1 | MOTOR ASSY(CAPSTAN)(DECK B) | |
| HP101 | A-2003-757-A | BASE ASSY, HEAD(DECK A) | |
| HRP101 | A-2003-930-A | BASE ASSY, HEAD(DECK B) | |

## 5-5. MECHANISM DECK SECTION-2
(DECK A : TCM-190RA12A)
(DECK B : TCM-190RB53A)




| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 201 | 3-359-469-01 | SPACER | |
| * 202 | 3-359-425-01 | SLIDER (REVERSE SLIDER) | |
| 203 | 3-359-426-01 | LEVER (REVERSE LEVER) | |
| * 204 | 3-359-415-01 | SLIDER (TRIGGER SLIDER) | |
| 204 | 3-359-415-11 | SLIDER (TRIGGER SLIDER) | |
| 205 | 3-359-448-11 | GEAR (TRIGGER) | |
| * 206 | 3-359-427-01 | SLIDER (LEVERSE SLIDER) | |
| 207 | 3-359-420-11 | GEAR (CAM GEAR) | |
| 208 | 3-359-454-01 | SPRING, TORSION | |
| 209 | 3-359-429-01 | SLIDER (BRAKE PLATE) | |
| 210 | 3-359-456-01 | SPRING(TRIGGER SPRING), TORSION | |
| 211 | X-3366-569-1 | ARM ASSY, FR | |
| 212 | 3-359-453-01 | SPRING (FR ARM), TORSION | |
| 213 | 3-359-419-11 | GEAR (FR GEAR) | |
| 214 | 3-359-421-11 | CLUTCH (REEL DISK) | |
| 215 | 3-359-418-11 | PULLEY (FR PULLEY) | |
| 216 | X-3359-415-1 | CHASSIS ASSY, MECHANICAL(DECK A) | |
| 216 | X-3363-790-1 | CHASSIS ASSY, MECHANICAL(DECK B) | |

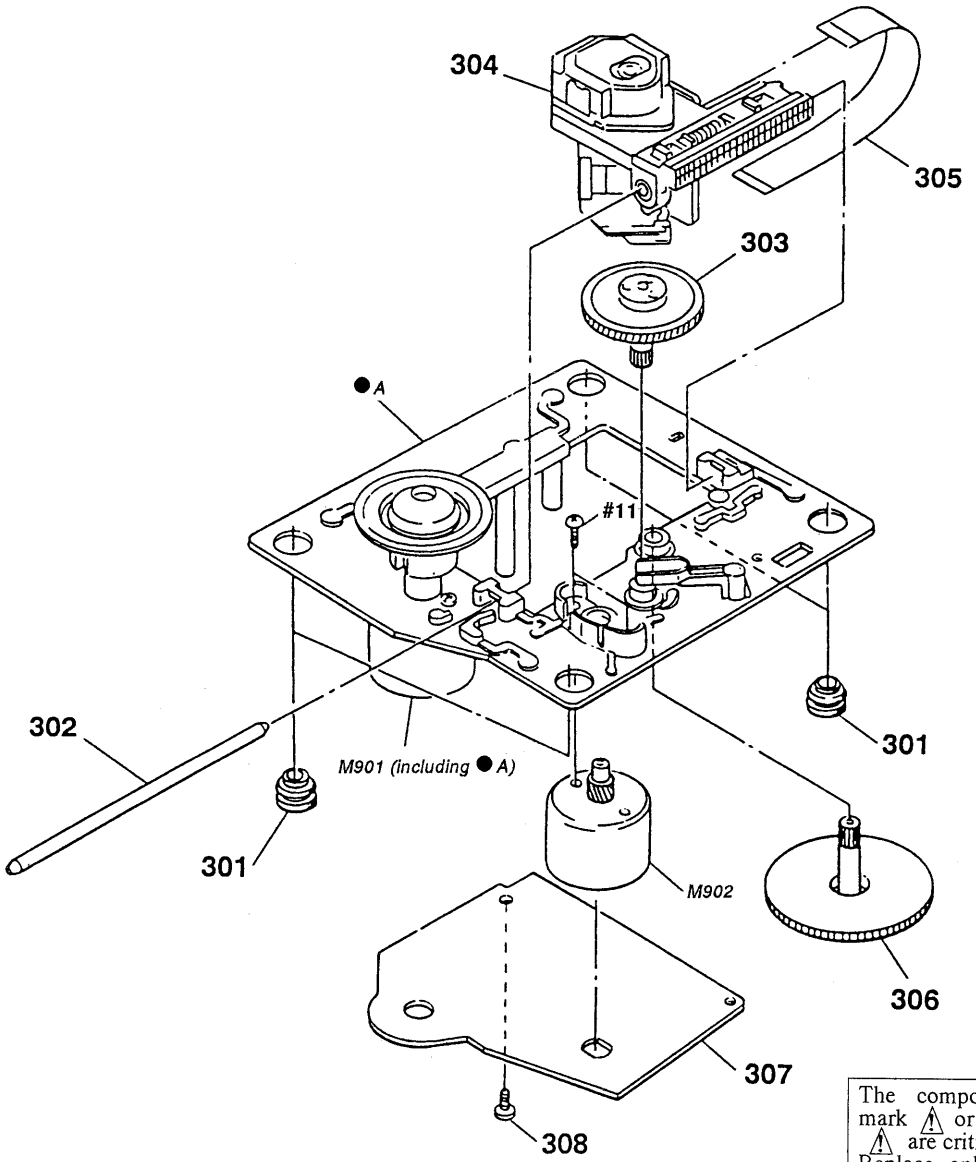
## 5-6. CD MECHANISM SECTION-1 (CDM-28-5BD15)




| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 251 | 4-960-835-01 | HOLDER (M) | |
| 252 | 1-452-719-11 | MAGNET ASSY | |
| * 253 | 4-917-583-21 | BRACKET, YOKE | |
| 254 | 4-960-838-01 | BASE (MD) | |
| 255 | 4-960-842-01 | GEAR (P) | |
| 256 | 4-927-649-01 | BELT | |
| 257 | 4-960-841-01 | PULLEY (S) | |
| * 258 | 4-960-839-01 | CAM | |
| 259 | 4-960-836-01 | TABLE, DISK | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| * 260 | 1-650-836-11 | LOADING BOARD | |
| 261 | 4-933-134-01 | SCREW (+PTPWH M2.6X6) | |
| 262 | 1-751-806-11 | WIRE (FLAT TYPE) (5 CORE) | |
| 263 | 4-959-996-01 | SPRING (932), COMPRESSION | |
| 264 | 4-960-834-01 | HOLDER (BU) | |
| M903 | A-4604-363-A | MOTOR (L) ASSY | |
| S291 | 1-572-086-11 | SWITCH, LEAF(LOAD OUT) | |
| S292 | 1-572-086-11 | SWITCH, LEAF(LOAD IN) | |

## 5-7. CD MECHANISM SECTION-2 (BU-5BD15A)




The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 301 | 4-951-940-01 | INSULATOR (BU) | |
| 302 | 4-917-565-01 | SHAFT, SLED | |
| 303 | 4-917-567-01 | GEAR (M) | |
| ⚠304 | 8-848-144-11 | DEVICE, OPTICAL KSS-240A | |
| 305 | 1-575-001-11 | WIRE, FLAT TYPE (12 CORE) | |
| 306 | 4-917-564-01 | GEAR (P), FLATNESS | |
| * 307 | A-4673-132-A | BD (A) BOARD, COMPLETE | |
| 308 | 4-951-620-01 | SCREW (2.6X8), +BVTP | |
| M901 | X-4917-504-1 | MOTOR ASSY(SLED) | |
| M902 | X-4917-523-1 | MOTOR ASSY(SPINDLE) | |

# SECTION 6
# ELECTRICAL PARTS LIST

**BD(A)**

NOTE :
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ , for example :
  uA.... : μ A.... , uPA.... : μ PA....
  uPB.... : μ PB.... , uPC.... : μ PC....
  uPD.... : μ PD....
- CAPACITORS
  uF : μ F
- COILS
  uH : μ H

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

- AUS : Australian
  G : German
  IT : Italian
  MX : Mexican
  EA : Saudi Arabia
  EE : Easc European
  MY : Malaysia
  SP : Singapore

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| * | A-4673-132-A | BD (A) BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | < CAPACITOR > | | | |
| C101 | 1-163-038-00 | CERAMIC CHIP | 0. 1uF | | 25V |
| C102 | 1-163-989-11 | CERAMIC CHIP | 0. 033uF | 10% | 25V |
| C103 | 1-135-157-21 | TANTALUM CHIP | 10uF | 20% | 6. 3V |
| C104 | 1-163-038-00 | CERAMIC CHIP | 0. 1uF | | 25V |
| C105 | 1-126-607-11 | ELECT CHIP | 47uF | 20% | 4V |
| C106 | 1-126-607-11 | ELECT CHIP | 47uF | 20% | 4V |
| C107 | 1-126-607-11 | ELECT CHIP | 47uF | 20% | 4V |
| C108 | 1-163-038-00 | CERAMIC CHIP | 0. 1uF | | 25V |
| C109 | 1-163-038-00 | CERAMIC CHIP | 0. 1uF | | 25V |
| C110 | 1-163-989-11 | CERAMIC CHIP | 0. 033uF | 10% | 25V |
| C111 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V |
| C112 | 1-164-232-11 | CERAMIC CHIP | 0. 01uF | | 50V |
| C113 | 1-164-232-11 | CERAMIC CHIP | 0. 01uF | | 50V |
| C114 | 1-164-695-11 | CERAMIC CHIP | 0. 0022uF | 5% | 50V |
| C115 | 1-164-695-11 | CERAMIC CHIP | 0. 0022uF | 5% | 50V |
| C117 | 1-163-038-00 | CERAMIC CHIP | 0. 1uF | | 25V |
| C118 | 1-163-038-00 | CERAMIC CHIP | 0. 1uF | | 25V |
| C119 | 1-164-695-11 | CERAMIC CHIP | 0. 0022uF | 5% | 50V |
| C120 | 1-163-989-11 | CERAMIC CHIP | 0. 033uF | 10% | 25V |
| C151 | 1-163-019-00 | CERAMIC CHIP | 0. 0068uF | 10% | 50V |
| C152 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V |
| C153 | 1-163-135-00 | CERAMIC CHIP | 560PF | 5% | 50V |
| C154 | 1-164-695-11 | CERAMIC CHIP | 0. 0022uF | 5% | 50V |
| C155 | 1-163-023-00 | CERAMIC CHIP | 0. 015uF | 5% | 50V |
| C171 | 1-163-038-00 | CERAMIC CHIP | 0. 1uF | | 25V |
| C172 | 1-163-038-00 | CERAMIC CHIP | 0. 1uF | | 25V |
| C173 | 1-163-038-00 | CERAMIC CHIP | 0. 1uF | | 25V |
| C174 | 1-163-038-00 | CERAMIC CHIP | 0. 1uF | | 25V |
| C201 | 1-163-809-11 | CERAMIC CHIP | 0. 047uF | 10% | 25V |
| C202 | 1-163-145-00 | CERAMIC CHIP | 0. 0015uF | 5% | 50V |
| C203 | 1-164-232-11 | CERAMIC CHIP | 0. 01uF | | 50V |
| C204 | 1-164-005-11 | CERAMIC CHIP | 0. 47uF | | 25V |
| C205 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V |
| C206 | 1-163-093-00 | CERAMIC CHIP | 10PF | 5% | 50V |
| C207 | 1-163-093-00 | CERAMIC CHIP | 10PF | 5% | 50V |
| C208 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V |
| C209 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V |
| C210 | 1-163-038-00 | CERAMIC CHIP | 0. 1uF | | 25V |
| C299 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V |
| C301 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V |
| C302 | 1-163-038-00 | CERAMIC CHIP | 0. 1uF | | 25V |
| C303 | 1-163-038-00 | CERAMIC CHIP | 0. 1uF | | 25V |
| C304 | 1-163-038-00 | CERAMIC CHIP | 0. 1uF | | 25V |
| C305 | 1-163-038-00 | CERAMIC CHIP | 0. 1uF | | 25V |
| C306 | 1-163-145-00 | CERAMIC CHIP | 0. 0015uF | 5% | 50V |
| C307 | 1-163-145-00 | CERAMIC CHIP | 0. 0015uF | 5% | 50V |
| C308 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V |
| C309 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V |
| C310 | 1-163-125-00 | CERAMIC CHIP | 220PF | 5% | 50V |
| C311 | 1-163-125-00 | CERAMIC CHIP | 220PF | 5% | 50V |
| C312 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V |
| C401 | 1-164-232-11 | CERAMIC CHIP | 0. 01uF | | 50V |
| | | < CONNECTOR > | | | |
| CN101 | 1-580-858-11 | SOCKET, CONNECTOR (SMT) 5P | | | |
| CN102 | 1-580-866-11 | SOCKET, CONNECTOR (SMT) 12P | | | |
| CN103 | 1-580-872-41 | SOCKET, CONNECTOR (SMT) 19P | | | |
| | | < DIODE > | | | |
| D101 | 8-719-421-82 | DIODE | MA8043-M | | |
| D201 | 8-719-016-74 | DIODE | 1SS352 | | |

| Ref.No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| | | < IC > | | | |
| IC101 | 8-752-053-73 | IC CXA1372AQ | | | |
| IC101 | 8-752-058-77 | IC CXA1372AQ | | | |
| IC102 | 8-759-823-48 | IC LA6525M | | | |
| IC103 | 8-759-636-20 | IC M54641FP-TP | | | |
| IC201 | 8-752-352-93 | IC CXD2500BQ | | | |
| IC201 | 8-752-351-78 | IC CXD2500BQ | | | |
| IC202 | 8-759-248-71 | IC uPD75116GF-J06-3BE | | | |
| IC203 | 8-759-098-27 | IC MSM6538-01GS-VKR1 | | | |
| IC301 | 8-759-155-52 | IC PCM-67U-B | | | |
| IC302 | 8-759-100-96 | IC UPC4558G2 | | | |
| IC302 | 8-759-996-43 | IC RC4558PS | | | |
| | | < JACK > | | | |
| J201 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| J203 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| J205 | 1-216-295-00 | METAL CHIP | 0 | 5% | 1/10W |
| J206 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| J207 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| J208 | 1-216-295-00 | METAL CHIP | 0 | 5% | 1/10W |
| J209 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| J210 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| J211 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| J212 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| J215 | 1-216-295-00 | METAL CHIP | 0 | 5% | 1/10W |
| | | < TRANSISTOR > | | | |
| Q101 | 8-729-805-45 | TRANSISTOR 2SC3395 | | | |
| Q201 | 8-729-602-21 | TRANSISTOR 2SC4154 | | | |
| | | < RESISTOR > | | | |
| R101 | 1-216-097-00 | METAL CHIP | 100K | 5% | 1/10W |
| R102 | 1-216-097-00 | METAL CHIP | 100K | 5% | 1/10W |
| R103 | 1-216-091-00 | METAL CHIP | 56K | 5% | 1/10W |
| R104 | 1-216-099-00 | METAL CHIP | 120K | 5% | 1/10W |
| R105 | 1-216-069-00 | METAL CHIP | 6.8K | 5% | 1/10W |
| R106 | 1-216-061-00 | METAL CHIP | 3.3K | 5% | 1/10W |
| R107 | 1-216-114-00 | METAL GLAZE | 510K | 5% | 1/10W |
| R108 | 1-216-105-00 | METAL CHIP | 220K | 5% | 1/10W |
| R109 | 1-216-061-00 | METAL CHIP | 3.3K | 5% | 1/10W |
| R110 | 1-216-049-00 | METAL CHIP | 1K | 5% | 1/10W |
| R111 | 1-216-049-00 | METAL CHIP | 1K | 5% | 1/10W |
| R112 | 1-216-083-00 | METAL CHIP | 27K | 5% | 1/10W |
| R113 | 1-216-071-00 | METAL CHIP | 8.2K | 5% | 1/10W |
| R114 | 1-216-105-00 | METAL CHIP | 220K | 5% | 1/10W |
| R152 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R153 | 1-216-085-00 | METAL CHIP | 33K | 5% | 1/10W |
| R154 | 1-216-085-00 | METAL CHIP | 33K | 5% | 1/10W |
| R155 | 1-216-093-00 | METAL CHIP | 68K | 5% | 1/10W |
| R156 | 1-216-081-00 | METAL CHIP | 22K | 5% | 1/10W |
| R157 | 1-236-427-11 | NETWORK, RES | 18K | | |
| R159 | 1-216-079-00 | METAL CHIP | 18K | 5% | 1/10W |
| R160 | 1-216-049-00 | METAL CHIP | 1K | 5% | 1/10W |
| R171 | 1-216-001-00 | METAL CHIP | 10 | 5% | 1/10W |
| R172 | 1-216-001-00 | METAL CHIP | 10 | 5% | 1/10W |
| R173 | 1-216-001-00 | METAL CHIP | 10 | 5% | 1/10W |
| R174 | 1-216-001-00 | METAL CHIP | 10 | 5% | 1/10W |
| R201 | 1-216-061-00 | METAL CHIP | 3.3K | 5% | 1/10W |
| R202 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R203 | 1-216-061-00 | METAL CHIP | 3.3K | 5% | 1/10W |
| R204 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R205 | 1-216-097-00 | METAL CHIP | 100K | 5% | 1/10W |
| R209 | 1-216-081-00 | METAL CHIP | 22K | 5% | 1/10W |
| R212 | 1-239-039-11 | RESISTOR, NETWORK (1608) | | | |
| R214 | 1-239-039-11 | RESISTOR, NETWORK (1608) | | | |
| R218 | 1-216-065-00 | METAL CHIP | 4.7K | 5% | 1/10W |
| R219 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R220 | 1-216-001-00 | METAL CHIP | 10 | 5% | 1/10W |
| R222 | 1-236-427-11 | NETWORK, RES | 18K | | |
| R223 | 1-216-081-00 | METAL CHIP | 22K | 5% | 1/10W |
| R224 | 1-216-081-00 | METAL CHIP | 22K | 5% | 1/10W |
| R225 | 1-216-081-00 | METAL CHIP | 22K | 5% | 1/10W |
| R226 | 1-216-081-00 | METAL CHIP | 22K | 5% | 1/10W |
| R230 | 1-216-051-00 | METAL CHIP | 1.2K | 5% | 1/10W |
| R231 | 1-216-051-00 | METAL CHIP | 1.2K | 5% | 1/10W |
| R232 | 1-216-041-00 | METAL CHIP | 470 | 5% | 1/10W |
| R233 | 1-216-041-00 | METAL CHIP | 470 | 5% | 1/10W |
| R234 | 1-216-051-00 | METAL CHIP | 1.2K | 5% | 1/10W |
| R235 | 1-216-051-00 | METAL CHIP | 1.2K | 5% | 1/10W |
| R236 | 1-236-413-11 | NETWORK, RES | 1.2K | | |
| R301 | 1-236-413-11 | NETWORK, RES | 1.2K | | |
| R303 | 1-216-055-00 | METAL CHIP | 1.8K | 5% | 1/10W |
| R304 | 1-216-055-00 | METAL CHIP | 1.8K | 5% | 1/10W |
| R305 | 1-216-097-00 | METAL CHIP | 100K | 5% | 1/10W |
| R306 | 1-216-097-00 | METAL CHIP | 100K | 5% | 1/10W |
| | | < VARIABLE RESISTOR > | | | |
| RV101 | 1-241-395-11 | RES, ADJ, METAL GLAZE 10K(TRACKING GAIN) | | | |
| RV102 | 1-241-395-11 | RES, ADJ, METAL GLAZE 10K(GAIN FOCUS) | | | |
| | | < SWITCH > | | | |
| SW101 | 1-572-085-11 | SWITCH, LEAF(LIMIT) | | | |
| | | < CRYSTAL > | | | |
| X201 | 1-567-908-11 | VIBRATOR, CRYSTAL(16MHz) | | | |

# BD(A) DISPLAY

| Ref.No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| X202 | 1-579-216-11 | VIBRATOR, CERAMIC(4MHz) | | | |
| ********** | | | | | |
| * | A-4369-006-A | DISPLAY BOARD, COMPLETE(AEP) | | | |
| | | ********** | | | |
| * | A-4365-998-A | DISPLAY BOARD, COMPLETE(Canadian) | | | |
| | | ********** | | | |
| * | A-4369-014-A | DISPLAY BOARD, COMPLETE(G) | | | |
| | | ********** | | | |
| * | A-4369-026-A | DISPLAY BOARD, COMPLETE(UK) | | | |
| | | ********** | | | |
| * | A-4369-050-A | DISPLAY BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | (E, AUS, EA, MX, MY, SP) | | | |
| * | A-4369-052-A | DISPLAY BOARD, COMPLETE(IT) | | | |
| | | ********** | | | |
| * | A-4369-057-A | DISPLAY BOARD, COMPLETE(EE) | | | |
| | | ********** | | | |
| * | 4-932-810-11 | CUSHION (FL) | | | |
| | 4-963-277-11 | HOLDER (FL) | | | |
| | | < CAPACITOR > | | | |
| C201 | 1-126-177-11 | ELECT | 100uF | 20% 10V | |
| C202 | 1-164-159-11 | CERAMIC | 0.1uF | 50V | |
| C203 | 1-124-229-00 | ELECT | 33uF | 20% 10V | |
| C205 | 1-126-301-11 | ELECT | 1uF | 20% 50V | |
| C206 | 1-164-159-11 | CERAMIC | 0.1uF | 50V | |
| C207 | 1-161-379-00 | CERAMIC | 0.01uF | 20% 25V | |
| C208 | 1-126-157-11 | ELECT | 10uF | 20% 16V | |
| C209 | 1-162-205-31 | CERAMIC | 18PF | 5% 50V | |
| C210 | 1-162-205-31 | CERAMIC | 18PF | 5% 50V | |
| C211 | 1-126-177-11 | ELECT | 100uF | 20% 10V | |
| C212 | 1-161-379-00 | CERAMIC | 0.01uF | 20% 25V | |
| C213 | 1-126-948-11 | ELECT | 100uF | 20% 35V | |
| C214 | 1-164-159-11 | CERAMIC | 0.1uF | 50V | |
| C215 | 1-164-159-11 | CERAMIC | 0.1uF | 50V | |
| C216 | 1-164-159-11 | CERAMIC | 0.1uF | 50V | |
| C217 | 1-161-379-00 | CERAMIC | 0.01uF | 20% 25V | |
| C218 | 1-124-584-00 | ELECT | 100uF | 20% 10V | |
| C219 | 1-161-379-00 | CERAMIC | 0.01uF | 20% 25V | |
| C220 | 1-126-177-11 | ELECT | 100uF | 20% 10V | |
| C221 | 1-161-379-00 | CERAMIC | 0.01uF | 20% 25V | |
| C222 | 1-162-294-31 | CERAMIC | 0.001uF | 10% 50V | |
| C223 | 1-164-159-11 | CERAMIC | 0.1uF | 50V | |
| C230 | 1-162-286-31 | CERAMIC | 220PF | 10% 50V | |
| C231 | 1-161-379-00 | CERAMIC | 0.01uF | 20% 25V | |
| C2000 | 1-126-177-11 | ELECT | 100uF | 20% 10V | |
| C2001 | 1-162-286-31 | CERAMIC | 220PF | 10% 50V | |
| | | | | (E, AUS, EA, MX, MY, SP) | |
| C2002 | 1-162-286-31 | CERAMIC | 220PF | 10% 50V | |
| | | | | (E, AUS, EA, MX, MY, SP) | |
| C2003 | 1-162-286-31 | CERAMIC | 220PF | 10% 50V | |
| | | | | (E, AUS, EA, MX, MY, SP) | |
| C2004 | 1-162-286-31 | CERAMIC | 220PF | 10% 50V | |
| | | | | (E, AUS, EA, MX, MY, SP) | |
| C2005 | 1-162-286-31 | CERAMIC | 220PF | 10% 50V | |
| | | | | (E, AUS, EA, MX, MY, SP) | |
| C2006 | 1-162-286-31 | CERAMIC | 220PF | 10% 50V | |
| | | | | (E, AUS, EA, MX, MY, SP) | |
| C2007 | 1-162-286-31 | CERAMIC | 220PF | 10% 50V | |
| | | | | (E, AUS, EA, MX, MY, SP) | |
| C2008 | 1-162-286-31 | CERAMIC | 220PF | 10% 50V | |
| | | | | (E, AUS, EA, MX, MY, SP) | |
| C2009 | 1-162-286-31 | CERAMIC | 220PF | 10% 50V | |
| | | | | (E, AUS, EA, MX, MY, SP) | |
| C2010 | 1-162-286-31 | CERAMIC | 220PF | 10% 50V | |
| | | | | (E, AUS, EA, MX, MY, SP) | |
| C2011 | 1-162-286-31 | CERAMIC | 220PF | 10% 50V | |
| | | | | (E, AUS, EA, MX, MY, SP) | |
| | | < CRYSTAL > | | | |
| CF201 | 1-567-775-11 | VIBRATOR, CERAMIC | | | |
| | | < CONNECTOR > | | | |
| CN201 | 1-764-298-11 | HOUSING, CONNECTOR(PC BOARD) 16P | | | |
| CN202 | 1-691-644-11 | SOCKET, CONNECTOR 7P | | | |
| CN203 | 1-691-649-11 | SOCKET, CONNECTOR 17P | | | |
| * CN2001 | 1-565-042-11 | HOUSING, CONNECTOR(PC BOARD) 5P | | | |
| | | | | | (E, AUS, EA, MX, MY, SP) |
| | | < DIODE > | | | |
| D201 | 8-719-987-63 | DIODE 1N4148M | | | |
| D202 | 8-719-987-63 | DIODE 1N4148M | | | |
| D203 | 8-719-987-63 | DIODE 1N4148M | | | |
| D204 | 8-719-987-63 | DIODE 1N4148M | | | |
| D205 | 8-719-987-63 | DIODE 1N4148M | | | |
| D206 | 8-719-010-40 | DIODE UZ-5.6BS-TP | | | |
| D207 | 8-719-010-40 | DIODE UZ-5.6BS-TP | | | |
| D208 | 8-719-014-90 | DIODE UZP-7.5B(EXCEPT G) | | | |
| D208 | 8-719-014-98 | DIODE UZP-8.2B(G) | | | |
| D213 | 8-719-026-64 | LED SML1260S(PRESET) | | | |
| D214 | 8-719-026-64 | LED SML1260S(MAIN) (E, AUS, EA, MX, MY, SP) | | | |
| D215 | 8-719-026-64 | LED SML1260S(SUB) (E, AUS, EA, MX, MY, SP) | | | |
| D216 | 8-719-026-64 | LED SML1260S(PON/SURR) | | | |
| D217 | 8-719-026-64 | LED SML1260S(DBS.HIGHT) | | | |
| D219 | 8-719-026-64 | LED SML1260S(DBS.LOW) | | | |
| D2000 | 8-719-987-63 | DIODE 1N4148M | | | |
| D2001 | 8-719-987-63 | DIODE 1N4148M | | | |
| D2002 | 8-719-987-63 | DIODE 1N4148M | | | |
| | | < FILTER > | | | |
| FL201 | 1-517-247-11 | INDICATOR TUBE, FLUORESCENT | | | |

| Ref.No. | Part No. | Description | Remark |
|---|---|---|---|
| | | < IC > | |
| IC201 | 8-759-248-73 | IC uPD78043GF-060-3B9 | |
| IC202 | 8-759-188-67 | IC X24C01P-S | |
| IC203 | 8-759-165-82 | IC PST600E-T | |
| IC204 | 8-749-923-80 | IC GP1U90XB | |
| IC205 | 8-759-000-48 | IC MC14052BCP | |
| IC206 | 8-759-248-70 | IC XR1093 | |
| IC2000 | 8-759-184-40 | IC LB1638 | |
| | | < COIL > | |
| L201 | 1-410-521-11 | INDUCTOR 100uH | |
| L202 | 1-410-521-11 | INDUCTOR 100uH | |
| L203 | 1-410-521-11 | INDUCTOR 100uH | |
| | | < TRANSISTOR > | |
| Q201 | 8-729-119-78 | TRANSISTOR 2SC403SP-51(EXCEPT IT) | |
| Q201 | 8-729-620-05 | TRANSISTOR 2SC2603-EF(IT) | |
| Q202 | 8-729-900-61 | TRANSISTOR DTA114ES | |
| Q203 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| Q204 | 8-729-119-78 | TRANSISTOR 2SC403SP-51(EXCEPT IT) | |
| Q204 | 8-729-620-05 | TRANSISTOR 2SC2603-EF(IT) | |
| Q205 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| Q206 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| | | < RESISTOR > | |
| R201 | 1-249-419-11 | CARBON 1.5K 5% 1/4W | |
| R202 | 1-249-409-11 | CARBON 220 5% 1/4W | |
| R204 | 1-249-406-11 | CARBON 120 5% 1/4W | |
| R205 | 1-247-811-31 | CARBON 150 5% 1/4W | |
| R206 | 1-249-408-11 | CARBON 180 5% 1/4W | |
| R207 | 1-249-409-11 | CARBON 220 5% 1/4W | |
| R208 | 1-249-410-11 | CARBON 270 5% 1/4W | |
| R209 | 1-249-411-11 | CARBON 330 5% 1/4W | |
| R211 | 1-249-419-11 | CARBON 1.5K 5% 1/4W | |
| R212 | 1-247-807-31 | CARBON 100 5% 1/4W | |
| R213 | 1-249-406-11 | CARBON 120 5% 1/4W | |
| R214 | 1-249-406-11 | CARBON 120 5% 1/4W | |
| R215 | 1-247-811-31 | CARBON 150 5% 1/4W | |
| R216 | 1-249-408-11 | CARBON 180 5% 1/4W | |
| R217 | 1-249-409-11 | CARBON 220 5% 1/4W | |
| R218 | 1-249-410-11 | CARBON 270 5% 1/4W | |
| R219 | 1-249-416-11 | CARBON 820 5% 1/4W | |
| R222 | 1-249-411-11 | CARBON 330 5% 1/4W | |
| R223 | 1-249-411-11 | CARBON 330 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R224 | 1-249-411-11 | CARBON 330 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R225 | 1-249-411-11 | CARBON 330 5% 1/4W | |
| R226 | 1-249-411-11 | CARBON 330 5% 1/4W | |
| R227 | 1-249-417-11 | CARBON 1K 5% 1/4W | |

| Ref.No. | Part No. | Description | Remark |
|---|---|---|---|
| R228 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R229 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R230 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R231 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R232 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R233 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R234 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R235 | 1-249-429-11 | CARBON 10K 5% 1/4W | |
| R236 | 1-249-429-11 | CARBON 10K 5% 1/4W | |
| R238 | 1-249-419-11 | CARBON 1.5K 5% 1/4W | |
| R240 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R241 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R242 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R243 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R244 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R245 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R246 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R247 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R248 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R249 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R250 | 1-249-429-11 | CARBON 10K 5% 1/4W | |
| R251 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R252 | 1-249-429-11 | CARBON 10K 5% 1/4W | |
| R253 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R254 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R255 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R256 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R257 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R258 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R259 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R260 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R261 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R262 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R263 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R264 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R265 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R266 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R267 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R268 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R269 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R270 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R271 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R272 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R273 | 1-249-425-11 | CARBON 4.7K 5% 1/4W | |
| R274 | 1-249-429-11 | CARBON 10K 5% 1/4W | |
| R275 | 1-249-429-11 | CARBON 10K 5% 1/4W | |
| R276 | 1-249-429-11 | CARBON 10K 5% 1/4W | |
| R277 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R278 | 1-249-429-11 | CARBON 10K 5% 1/4W | |

# DISPLAY ECHO

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| R279 | 1-249-422-11 | CARBON 2.7K 5% 1/4W | |
| R280 | 1-249-422-11 | CARBON 2.7K 5% 1/4W | |
| R281 | 1-249-423-11 | CARBON 3.3K 5% 1/4W | |
| R282 | 1-249-419-11 | CARBON 1.5K 5% 1/4W | |
| R283 | 1-249-441-11 | CARBON 100K 5% 1/4W | |
| R284 | 1-249-429-11 | CARBON 10K 5% 1/4W | |
| R285 | 1-249-425-11 | CARBON 4.7K 5% 1/4W | |
| R286 | 1-249-429-11 | CARBON 10K 5% 1/4W | |
| R287 | 1-247-807-31 | CARBON 100 5% 1/4W | |
| R288 | 1-247-807-31 | CARBON 100 5% 1/4W | |
| R289 | 1-249-429-11 | CARBON 10K 5% 1/4W | |
| R298 | 1-249-411-11 | CARBON 330 5% 1/4W | |
| R2051 | 1-249-421-11 | CARBON 2.2K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R2051 | 1-249-413-11 | CARBON 470 5% 1/4W(G) | |
| R2051 | 1-247-844-11 | CARBON 3.6K 5% 1/4W(Canadian) | |
| R2051 | 1-247-832-11 | CARBON 1.1K 5% 1/4W(IT) | |
| R2051 | 1-249-426-11 | CARBON 5.6K 5% 1/4W(EE) | |
| R2052 | 1-249-429-11 | CARBON 10K 5% 1/4W(G) | |
| | | < VARIABLE RESISTOR > | |
| RV2001 | 1-241-876-11 | RES, VAR, CARBON 50K(MIC VOLUME) | (E, AUS, EA, MX, MY, SP) |
| RV2002 | 1-241-876-11 | RES, VAR, CARBON 50K(ECHO VOLUME) | (E, AUS, EA, MX, MY, SP) |
| | | < SWITCH > | |
| S201 | 1-572-184-11 | SWITCH, KEY BOARD(SYSTEM POWER) | |
| S203 | 1-572-184-11 | SWITCH, KEY BOARD(TIMER SET) | |
| S204 | 1-572-184-11 | SWITCH, KEY BOARD(DAILY) | |
| S205 | 1-572-184-11 | SWITCH, KEY BOARD(REC TIMER) | |
| S206 | 1-572-184-11 | SWITCH, KEY BOARD(CLOCK SET) | |
| S207 | 1-572-184-11 | SWITCH, KEY BOARD(MPX) | (E, AUS, EA, MX, MY, SP) |
| S208 | 1-572-184-11 | SWITCH, KEY BOARD(DBFB) | |
| S209 | 1-572-184-11 | SWITCH, KEY BOARD(S.SVR) | |
| S211 | 1-572-184-11 | SWITCH, KEY BOARD(EFEFCT) | |
| S212 | 1-572-184-11 | SWITCH, KEY BOARD(EQ PRESET) | |
| S213 | 1-572-184-11 | SWITCH, KEY BOARD(MEMORY/NEXT) | |
| S214 | 1-572-184-11 | SWITCH, KEY BOARD(FUNCTION) | |
| S215 | 1-572-184-11 | SWITCH, KEY BOARD(TUNER/BAND) | |
| S216 | 1-572-184-11 | SWITCH, KEY BOARD(PRESET/TUNING) | |
| S217 | 1-572-184-11 | SWITCH, KEY BOARD(PRESET) | |
| S218 | 1-572-184-11 | SWITCH, KEY BOARD(TUNER/TIMER) | |
| | | < CRYSTAL > | |
| X201 | 1-567-098-41 | VIBRATOR, CRYSTAL(32.768MHz) | |

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| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| * | A-4369-051-A | ECHO BOARD, COMPLETE(E, AUS, EA, MX, MY, SP) | |
| | | ********** | |
| | | < CAPACITOR > | |
| C100 | 1-162-282-31 | CERAMIC 100PF 10% 50V | (E, AUS, EA, MX, MY, SP) |
| C110 | 1-124-907-11 | ELECT 10uF 20% 50V | (E, AUS, EA, MX, MY, SP) |
| C113 | 1-162-282-31 | CERAMIC 100PF 10% 50V | (E, AUS, EA, MX, MY, SP) |
| C114 | 1-124-907-11 | ELECT 10uF 20% 50V | (E, AUS, EA, MX, MY, SP) |
| C116 | 1-124-903-11 | ELECT 1uF 20% 50V | (E, AUS, EA, MX, MY, SP) |
| C117 | 1-130-484-00 | MYLAR 0.012uF 5% 50V | (E, AUS, EA, MX, MY, SP) |
| C118 | 1-124-903-11 | ELECT 1uF 20% 50V | (E, AUS, EA, MX, MY, SP) |
| C119 | 1-161-494-00 | CERAMIC 0.022uF 25V | (E, AUS, EA, MX, MY, SP) |
| C120 | 1-102-118-00 | CERAMIC 0.0012uF 10% 50V | (E, AUS, EA, MX, MY, SP) |
| C121 | 1-136-163-00 | FILM 0.068uF 5% 50V | (E, AUS, EA, MX, MY, SP) |
| C122 | 1-124-910-11 | ELECT 47uF 20% 50V | (E, AUS, EA, MX, MY, SP) |
| C123 | 1-164-159-11 | CERAMIC 0.1uF 50V | (E, AUS, EA, MX, MY, SP) |
| C124 | 1-164-159-11 | CERAMIC 0.1uF 50V | (E, AUS, EA, MX, MY, SP) |
| C125 | 1-136-163-00 | FILM 0.068uF 5% 50V | (E, AUS, EA, MX, MY, SP) |
| C126 | 1-102-118-00 | CERAMIC 0.0012uF 10% 50V | (E, AUS, EA, MX, MY, SP) |
| C127 | 1-124-903-11 | ELECT 1uF 20% 50V | (E, AUS, EA, MX, MY, SP) |
| C128 | 1-130-484-00 | MYLAR 0.012uF 5% 50V | (E, AUS, EA, MX, MY, SP) |
| C129 | 1-161-494-00 | CERAMIC 0.022uF 25V | (E, AUS, EA, MX, MY, SP) |
| C130 | 1-126-101-11 | ELECT 100uF 20% 16V | (E, AUS, EA, MX, MY, SP) |
| C131 | 1-164-159-11 | CERAMIC 0.1uF 50V | (E, AUS, EA, MX, MY, SP) |
| C132 | 1-124-907-11 | ELECT 10uF 20% 50V | (E, AUS, EA, MX, MY, SP) |
| C134 | 1-162-288-31 | CERAMIC 330PF 10% 50V | (E, AUS, EA, MX, MY, SP) |
| C135 | 1-162-288-31 | CERAMIC 330PF 10% 50V | (E, AUS, EA, MX, MY, SP) |

| Ref.No. | Part No. | Description | Remark |
|---|---|---|---|
| | | < CONNECTOR > | |
| * CN101 | 1-565-041-11 | PIN, CONNECTOR (PC BOARD) 5P | (E, AUS, EA, MX, MY, SP) |
| CN102 | 1-695-368-31 | PIN, CONNECTOR (PC BOARD) 7P | (E, AUS, EA, MX, MY, SP) |
| | | < DIODE > | |
| D101 | 8-719-028-15 | DIODE LED-SX-TP | (E, AUS, EA, MX, MY, SP) |
| | | < IC > | |
| IC101 | 8-759-634-51 | IC M5218AP | (E, AUS, EA, MX, MY, SP) |
| IC103 | 8-759-248-69 | IC M65830AP | (E, AUS, EA, MX, MY, SP) |
| | | < COIL > | |
| L101 | 1-408-104-00 | INDUCTOR 1mH | (E, AUS, EA, MX, MY, SP) |
| | | < RESISTOR > | |
| R106 | 1-247-887-00 | CARBON 220K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R107 | 1-247-887-00 | CARBON 220K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R108 | 1-249-432-11 | CARBON 18K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R109 | 1-249-429-11 | CARBON 10K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R110 | 1-249-429-11 | CARBON 10K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R111 | 1-249-429-11 | CARBON 10K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R114 | 1-249-417-11 | CARBON 1K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R115 | 1-249-431-11 | CARBON 15K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R116 | 1-249-431-11 | CARBON 15K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R117 | 1-249-429-11 | CARBON 10K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R118 | 1-247-866-11 | CARBON 30K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R119 | 1-247-842-11 | CARBON 3K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R120 | 1-249-431-11 | CARBON 15K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R121 | 1-249-429-11 | CARBON 10K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R122 | 1-249-431-11 | CARBON 15K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R123 | 1-249-422-11 | CARBON 2.7K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R124 | 1-247-903-00 | CARBON 1M 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R125 | 1-247-883-00 | CARBON 150K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R126 | 1-247-794-11 | CARBON 30 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R149 | 1-249-423-11 | CARBON 3.3K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R150 | 1-249-429-11 | CARBON 10K 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| | | < CRYSTAL > | |
| X101 | 1-577-637-11 | VIBRATOR, CERAMIC(500kHz) | (E, AUS, EA, MX, MY, SP) |
| ********** | | | |
| * | 1-651-085-11 | JACK BOARD | |
| | | ********** | |
| | | < CAPACITOR > | |
| C102 | 1-162-294-31 | CERAMIC 0.001uF 10% 50V | (E, AUS, EA, MX, MY, SP, CA) |
| C103 | 1-162-294-31 | CERAMIC 0.001uF 10% 50V | (E, AUS, EA, MX, MY, SP, CA) |
| C104 | 1-162-282-31 | CERAMIC 100PF 10% 50V | (E, AUS, EA, MX, MY, SP, CA) |
| C106 | 1-162-215-31 | CERAMIC 47PF 5% 50V | (E, AUS, EA, MX, MY, SP, CA) |
| C107 | 1-126-157-11 | ELECT 10uF 20% 16V | (E, AUS, EA, MX, MY, SP, CA) |
| C108 | 1-126-157-11 | ELECT 10uF 20% 16V | (E, AUS, EA, MX, MY, SP, CA) |
| C109 | 1-124-463-00 | ELECT 0.1uF 20% 50V | (E, AUS, EA, MX, MY, SP, CA) |
| C111 | 1-162-294-31 | CERAMIC 0.001uF 10% 50V | (E, AUS, EA, MX, MY, SP, CA) |
| C112 | 1-164-159-11 | CERAMIC 0.1uF 50V | (E, AUS, EA, MX, MY, SP, CA) |
| C151 | 1-162-282-31 | CERAMIC 100PF 10% 50V | |
| C152 | 1-162-282-31 | CERAMIC 100PF 10% 50V | |
| C153 | 1-161-379-00 | CERAMIC 0.01uF 20% 25V | (G, IT) |
| | | < CONNECTOR > | |
| CN151 | 1-568-852-11 | PIN, CONNECTOR (PC BOARD) 9P | |
| | | < IC > | |
| IC151 | 8-759-634-51 | IC M5218AP | (E, AUS, EA, MX, MY, SP, CA) |
| | | < JACK > | |
| J101 | 1-750-032-11 | JACK (DIA. 3.5)(MIC JACK) | (E, AUS, EA, MX, MY, SP, CA) |

# JACK LOADING MAIN

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| J151 | 1-750-032-11 | JACK (DIA. 3.5)(HEADPHONE) | | | |
| | | < RESISTOR > | | | |
| R101 | 1-249-429-11 | CARBON | 10K | 5% 1/4W | (E, AUS, EA, MX, MY, SP, CA) |
| R102 | 1-249-417-11 | CARBON | 1K | 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R102 | 1-249-414-11 | CARBON | 560 | 5% 1/4W | (Canadian) |
| R103 | 1-249-417-11 | CARBON | 1K | 5% 1/4W | (E, AUS, EA, MX, MY, SP, CA) |
| R104 | 1-247-889-00 | CARBON | 270K | 5% 1/4W | (E, AUS, EA, MX, MY, SP, CA) |
| R105 | 1-249-441-11 | CARBON | 100K | 5% 1/4W | (E, AUS, EA, MX, MY, SP, CA) |
| R151 | 1-249-414-11 | CARBON | 560 | 5% 1/4W | |
| R152 | 1-249-414-11 | CARBON | 560 | 5% 1/4W | |
| ********** | | | | | |
| * | 1-650-836-11 | LOADING BOARD | | | |
| | | ********** | | | |
| | | < CONNECTOR > | | | |
| CN291 | 1-580-918-11 | HOUSING, CONNECTOR 5P | | | |
| | | < SWITCH > | | | |
| S291 | 1-572-086-11 | SWITCH, LEAF(LOAD OUT) | | | |
| S292 | 1-572-086-11 | SWITCH, LEAF(LOAD IN) | | | |
| ********** | | | | | |
| * | A-4365-991-A | MAIN BOARD, COMPLETE(Canadian) | | | |
| | | ********** | | | |
| * | A-4365-999-A | MAIN BOARD, COMPLETE(AEP) | | | |
| | | ********** | | | |
| * | A-4369-007-A | MAIN BOARD, COMPLETE(G, IT) | | | |
| | | ********** | | | |
| * | A-4369-019-A | MAIN BOARD, COMPLETE(UK) | | | |
| | | ********** | | | |
| * | A-4369-043-A | MAIN BOARD, COMPLETE(E, AUS, EA, MX, MY, SP) | | | |
| | | ********** | | | |
| * | A-4369-056-A | MAIN BOARD, COMPLETE(EE) | | | |
| | | ********** | | | |
| | 4-925-530-01 | PLATE, GROUND(TB2)(H650/H650M:AEP, IT) | | | |
| | 7-682-548-04 | SCREW +BVTT 3X8 (S) | | | |
| | | < CAPACITOR > | | | |
| C1 | 1-162-195-31 | CERAMIC | 4.7PF | 10% 50V | (AEP, E, AUS, EA, MX, MY, SP) |
| C2 | 1-124-907-11 | ELECT | 10uF | 20% 50V | |
| C3 | 1-161-379-00 | CERAMIC | 0.01uF | 20% 25V | |
| C4 | 1-162-294-31 | CERAMIC | 0.001uF | 10% 50V | |
| C5 | 1-101-005-00 | CERAMIC | 22000PF | 50V | (AEP, UK, EE) |
| C5 | 1-101-006-00 | CERAMIC | 0.047uF | 50V | (E, AUS, EA, MX, MY, SP) |
| C6 | 1-162-280-31 | CERAMIC | 82PF | 10% 50V | (AEP, UK, EE) |
| C6 | 1-162-195-31 | CERAMIC | 4.7PF | 10% 50V | (E, AUS, EA, MX, MY, SP) |
| C7 | 1-136-162-00 | FILM | 0.056uF | 5% 50V | (E, AUS, EA, MX, MY, SP) |
| C8 | 1-164-159-11 | CERAMIC | 0.1uF | 50V | (E, AUS, EA, MX, MY, SP) |
| C9 | 1-102-120-00 | CERAMIC | 0.0018uF | 10% 50V | (AEP, UK, EE) |
| C10 | 1-161-374-11 | CERAMIC | 0.0015uF | 20% 50V | (AEP, UK, EE) |
| C11 | 1-164-097-11 | CERAMIC | 0.022uF | 50V | (EXCEPT G, Canadian, IT) |
| C12 | 1-164-159-11 | CERAMIC | 0.1uF | 50V | |
| C13 | 1-102-936-00 | CERAMIC | 3.0PF | +-0.25PF 50V | (AEP, UK, EE) |
| C13 | 1-102-942-00 | CERAMIC | 5.0PF | +-0.5PF 50V | (EXCEPT AEP, UK, EE) |
| C14 | 1-124-463-00 | ELECT | 0.1uF | 20% 50V | |
| C15 | 1-164-095-11 | CERAMIC | 0.01uF | 10% 16V | |
| C16 | 1-124-925-11 | ELECT | 2.2uF | 20% 100V | |
| C17 | 1-164-097-11 | CERAMIC | 0.022uF | 50V | (AEP, UK, EE) |
| C18 | 1-164-097-11 | CERAMIC | 0.022uF | 50V | (AEP, UK, EE) |
| C19 | 1-124-902-00 | ELECT | 0.47uF | 20% 50V | (AEP, UK, EE) |
| C20 | 1-124-477-11 | ELECT | 47uF | 20% 25V | |
| C21 | 1-161-379-00 | CERAMIC | 0.01uF | 20% 25V | |
| C22 | 1-124-907-11 | ELECT | 10uF | 20% 50V | |
| C23 | 1-164-095-11 | CERAMIC | 0.01uF | 10% 16V | |
| C24 | 1-161-379-00 | CERAMIC | 0.01uF | 20% 25V | |
| C25 | 1-164-025-51 | CERAMIC | 18PF | 5% 50V | |
| C26 | 1-164-025-51 | CERAMIC | 18PF | 5% 50V | |
| C27 | 1-161-379-00 | CERAMIC | 0.01uF | 20% 25V | |
| C28 | 1-161-379-00 | CERAMIC | 0.01uF | 20% 25V | |
| C29 | 1-161-379-00 | CERAMIC | 0.01uF | 20% 25V | |
| C30 | 1-162-207-31 | CERAMIC | 22PF | 5% 50V | |
| C31 | 1-161-379-00 | CERAMIC | 0.01uF | 20% 25V | |
| C32 | 1-124-907-11 | ELECT | 10uF | 20% 50V | |
| C33 | 1-161-379-00 | CERAMIC | 0.01uF | 20% 25V | |
| C34 | 1-161-379-00 | CERAMIC | 0.01uF | 20% 25V | |
| C35 | 1-161-379-00 | CERAMIC | 0.01uF | 20% 25V | |
| C36 | 1-161-379-00 | CERAMIC | 0.01uF | 20% 25V | |
| C37 | 1-124-925-11 | ELECT | 2.2uF | 20% 100V | |
| C38 | 1-124-903-11 | ELECT | 1uF | 20% 50V | |
| C39 | 1-124-903-11 | ELECT | 1uF | 20% 50V | |
| C40 | 1-161-379-00 | CERAMIC | 0.01uF | 20% 25V | |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C41 | 1-126-962-11 | ELECT | 3.3uF | 20% | 50V |
| C42 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C43 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C44 | 1-161-377-00 | CERAMIC | 0.0047uF | 30% | 16V |
| C45 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V (EXCEPT G, TI) |
| C45 | 1-161-374-11 | CERAMIC | 0.0015uF | 20% | 50V (G, IT) |
| C46 | 1-162-282-31 | CERAMIC | 100PF | 10% | 50V (G, IT) |
| C47 | 1-124-903-11 | ELECT | 1uF | 20% | 50V |
| C48 | 1-130-485-00 | MYLAR | 0.015uF | 5% | 50V (EXCEPT Canadian) |
| C48 | 1-130-487-00 | MYLAR | 0.022uF | 5% | 50V (Canadian) |
| C49 | 1-130-485-00 | MYLAR | 0.015uF | 5% | 50V (EXCEPT Canadian) |
| C49 | 1-130-487-00 | MYLAR | 0.022uF | 5% | 50V (Canadian) |
| C50 | 1-124-903-11 | ELECT | 1uF | 20% | 50V |
| C51 | 1-124-903-11 | ELECT | 1uF | 20% | 50V |
| C52 | 1-124-903-11 | ELECT | 1uF | 20% | 50V |
| C53 | 1-124-903-11 | ELECT | 1uF | 20% | 50V |
| C54 | 1-161-375-00 | CERAMIC | 0.0022uF | 20% | 50V |
| C55 | 1-161-375-00 | CERAMIC | 0.0022uF | 20% | 50V |
| C56 | 1-124-477-11 | ELECT | 47uF | 20% | 25V |
| C57 | 1-126-176-11 | ELECT | 220uF | 20% | 10V |
| C58 | 1-161-494-00 | CERAMIC | 0.022uF | | 25V |
| C59 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C60 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C61 | 1-130-478-00 | MYLAR | 0.0039uF | 5% | 50V |
| C62 | 1-130-478-00 | MYLAR | 0.0039uF | 5% | 50V |
| C63 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C64 | 1-164-097-11 | CERAMIC | 0.022uF | | 50V |
| C65 | 1-101-884-00 | CERAMIC | 56PF | 5% | 50V |
| C66 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C68 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V (G, IT) |
| C100 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V (E, AUS, EA, MX, MY, SP) |
| C501 | 1-126-926-11 | ELECT | 1000uF | 20% | 10V |
| C502 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C503 | 1-124-903-11 | ELECT | 1uF | 20% | 50V |
| C504 | 1-124-443-00 | ELECT | 100uF | 20% | 10V |
| C505 | 1-124-903-11 | ELECT | 1uF | 20% | 50V |
| C506 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C507 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C601 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V |
| C604 | 1-162-282-31 | CERAMIC | 100PF | 10% | 50V (AEP, G, UK, IT, EE) |
| C605 | 1-124-927-11 | ELECT | 4.7uF | 20% | 100V (AEP, G, UK, IT, EE) |
| C606 | 1-137-365-11 | FILM | 0.0015uF | 5% | 50V (AEP, G, UK, IT, EE) |
| C607 | 1-137-437-11 | FILM | 0.0056uF | 5% | 50V (AEP, G, UK, IT, EE) |
| C608 | 1-124-925-11 | ELECT | 2.2uF | 20% | 100V |
| C609 | 1-124-477-11 | ELECT | 47uF | 20% | 25V (AEP, G, UK, IT, EE) |
| C610 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C611 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V (E, AUS, EA, MX, MY, SP) |
| C612 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V (E, AUS, EA, MX, MY, SP) |
| C613 | 1-136-157-00 | FILM | 0.022uF | 5% | 50V (E, AUS, EA, MX, MY, SP) |
| C614 | 1-162-282-31 | CERAMIC | 100PF | 10% | 50V |
| C615 | 1-162-282-31 | CERAMIC | 100PF | 10% | 50V |
| C616 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C617 | 1-124-927-11 | ELECT | 4.7uF | 20% | 100V |
| C618 | 1-162-288-31 | CERAMIC | 330PF | 10% | 50V (G, Canadian, IT) |
| C619 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V (G, IT) |
| C620 | 1-162-282-31 | CERAMI | 100PF | 10% | 50V (G, IT) |
| C638 | 1-162-282-31 | CERAMIC | 100PF | 10% | 50V |
| C639 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V |
| C646 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C647 | 1-124-927-11 | ELECT | 4.7uF | 20% | 100V |
| C648 | 1-162-282-31 | CERAMIC | 100PF | 10% | 50V |
| C649 | 1-162-282-31 | CERAMIC | 100PF | 10% | 50V |
| C651 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V |
| C654 | 1-162-282-31 | CERAMIC | 100PF | 10% | 50V (AEP, G, UK, IT, EE) |
| C655 | 1-124-927-11 | ELECT | 4.7uF | 20% | 100V (AEP, G, UK, IT, EE) |
| C656 | 1-137-365-11 | FILM | 0.0015uF | 5% | 50V (AEP, G, UK, IT, EE) |
| C657 | 1-137-437-11 | FILM | 0.0056uF | 5% | 50V (AEP, G, UK, IT, EE) |
| C658 | 1-124-925-11 | ELECT | 2.2uF | 20% | 100V |
| C659 | 1-124-477-11 | ELECT | 47uF | 20% | 25V (AEP, G, UK, IT, EE) |
| C660 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C661 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V (E, AUS, EA, MX, MY, SP) |
| C662 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V (E, AUS, EA, MX, MY, SP) |
| C663 | 1-136-157-00 | FILM | 0.022uF | 5% | 50V (E, AUS, EA, MX, MY, SP) |
| C664 | 1-162-282-31 | CERAMIC | 100PF | 10% | 50V |
| C665 | 1-162-282-31 | CERAMIC | 100PF | 10% | 50V |
| C666 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C667 | 1-124-927-11 | ELECT | 4.7uF | 20% | 100V |

# MAIN

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C668 | 1-162-288-31 | CERAMIC | 330PF | 10% | 50V (G, Canadian, IT) |
| C669 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V (G, IT) |
| C670 | 1-162-282-31 | CERAMIC | 100PF | 10% | 50V (G, IT) |
| C688 | 1-162-282-31 | CERAMIC | 100PF | 10% | 50V |
| C689 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V |
| C696 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C697 | 1-124-927-11 | ELECT | 4.7uF | 20% | 100V |
| C698 | 1-162-282-31 | CERAMIC | 100PF | 10% | 50V |
| C699 | 1-162-282-31 | CERAMIC | 100PF | 10% | 50V |
| C701 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C702 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C704 | 1-124-252-00 | ELECT | 0.33uF | 20% | 50V |
| C705 | 1-124-902-00 | ELECT | 0.47uF | 20% | 50V |
| C706 | 1-136-166-00 | FILM | 0.12uF | 5% | 50V |
| C707 | 1-101-006-00 | CERAMIC | 0.047uF | | 50V |
| C709 | 1-124-902-00 | ELECT | 0.47uF | 20% | 50V |
| C710 | 1-124-464-11 | ELECT | 0.22uF | 20% | 50V |
| C711 | 1-136-162-00 | FILM | 0.056uF | 5% | 50V |
| C712 | 1-136-157-00 | FILM | 0.022uF | 5% | 50V |
| C713 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V |
| C714 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V |
| C715 | 1-137-368-11 | FILM | 0.0047uF | 5% | 50V |
| C716 | 1-137-366-11 | FILM | 0.0022uF | 5% | 50V |
| C717 | 1-137-437-11 | FILM | 0.0056uF | 5% | 50V |
| C718 | 1-137-439-91 | FILM | 0.012uF | 5% | 50V |
| C719 | 1-126-160-11 | ELECT | 1uF | 20% | 50V |
| C720 | 1-126-163-11 | ELECT | 4.7uF | 20% | 50V |
| C731 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C732 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C734 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C735 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C736 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C741 | 1-162-289-31 | CERAMIC | 390PF | 10% | 50V |
| C751 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C752 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C754 | 1-124-252-00 | ELECT | 0.33uF | 20% | 50V |
| C755 | 1-124-902-00 | ELECT | 0.47uF | 20% | 50V |
| C756 | 1-136-166-00 | FILM | 0.12uF | 5% | 50V |
| C757 | 1-101-006-00 | CERAMIC | 0.047uF | | 50V |
| C759 | 1-124-902-00 | ELECT | 0.47uF | 20% | 50V |
| C760 | 1-124-464-11 | ELECT | 0.22uF | 20% | 50V |
| C761 | 1-136-162-00 | FILM | 0.056uF | 5% | 50V |
| C762 | 1-136-157-00 | FILM | 0.022uF | 5% | 50V |
| C763 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V |
| C764 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V |
| C765 | 1-137-368-11 | FILM | 0.0047uF | 5% | 50V |
| C766 | 1-137-366-11 | FILM | 0.0022uF | 5% | 50V |
| C767 | 1-137-437-11 | FILM | 0.0056uF | 5% | 50V |
| C768 | 1-137-439-91 | FILM | 0.012uF | 5% | 50V |
| C769 | 1-124-903-11 | ELECT | 1uF | 20% | 50V |
| C770 | 1-126-163-11 | ELECT | 4.7uF | 20% | 50V |
| C777 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V (EXCEPT Canadian) |
| C778 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C849 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V (G, IT) |
| C899 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V (G, IT) |
| C1000 | 1-162-199-31 | CERAMIC | 10PF | 5% | 50V (G, IT) |
| | | < FILTER > | | | |
| CF1 | 1-567-389-11 | FILTER, CERAMIC | | | |
| CF2 | 1-567-389-11 | FILTER, CERAMIC(G, IT) | | | |
| CF3 | 1-567-389-11 | FILTER, CERAMIC | | | |
| | | < CONNECTOR > | | | |
| * CN501 | 1-573-085-11 | CONNECTOR, FPC (NON ZIF) 19P | | | |
| CN502 | 1-764-286-11 | PIN, CONNECTOR (PC BOARD) 16P | | | |
| CN503 | 1-695-340-21 | PIN, CONNECTOR (PC BOARD) 17P | | | |
| CN601 | 1-764-290-11 | PIN, CONNECTOR (PC BOARD) 24P | | | |
| CN853 | 1-695-659-11 | CONNECTOR, FFC/FPC 11P | | | |
| | | < TRIMMER > | | | |
| CT1 | 1-141-227-00 | CAP, TRIMMER | 20PF(E, AUS, EA, MX, MY, SP) | | |
| CT2 | 1-141-227-00 | CAP, TRIMMER | 20PF(E, AUS, EA, MX, MY, SP) | | |
| | | < DIODE > | | | |
| D1 | 8-719-976-30 | DIODE | KV1560N(E, AUS, EA, MX, MY, SP) | | |
| D2 | 8-719-987-63 | DIODE | 1N4148M | | |
| D501 | 8-719-987-63 | DIODE | 1N4148M(E, AUS, EA, MX, MY, SP) | | |
| D502 | 8-719-987-63 | DIODE | 1N4148M | | |
| D503 | 8-719-987-63 | DIODE | 1N4148M(E, AUS, EA, MX, MY, SP) | | |
| D504 | 8-719-987-63 | DIODE | 1N4148M(E, AUS, EA, MX, MY, SP) | | |
| D551 | 8-719-987-63 | DIODE | 1N4148M(E, AUS, EA, MX, MY, SP) | | |
| D552 | 8-719-987-63 | DIODE | 1N4148M(E, AUS, EA, MX, MY, SP) | | |
| D702 | 8-719-987-63 | DIODE | 1N4148M | | |
| D703 | 8-719-987-63 | DIODE | 1N4148M | | |
| D704 | 8-719-987-63 | DIODE | 1N4148M | | |
| D849 | 8-719-987-63 | DIODE | 1N4148M | | |
| D899 | 8-719-987-63 | DIODE | 1N4148M | | |
| | | < FRONT END > | | | |
| FE1 | 1-465-673-11 | FRONT END (2 BAND) (H650:EXCEPT G/H650M:Canadian) | | | |
| FE1 | 1-465-007-11 | FRONT END (4 GANG) (G, IT) | | | |
| FE1 | 1-465-396-11 | FRONT END (3 GANG) (EE) | | | |
| FE2 | 1-239-846-11 | ENCAPSULATED COMPONENT(AEP, UK, EE) | | | |
| FE3 | 1-239-261-12 | ENCAPSULATED COMPONENT(AEP, UK, EE) | | | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| FE3 | 1-239-262-11 | ENCAPSULATED COMPONENT | (E, AUS, EA, MX, MY, SP) |
| FE3 | 1-239-260-11 | ENCAPSULATED COMPONENT(G, IT) | |
| FE3 | 1-239-634-11 | ENCAPSULATED COMPONENT, AM.R (Canadian) | |
| | | < FILTER > | |
| FL1 | 1-236-465-11 | ENCAPSULATED COMPONENT(G, IT) | |
| FL2 | 1-239-597-11 | FILTER, LOW PASS | |
| FL3 | 1-239-597-11 | FILTER, LOW PASS | |
| | | < IC > | |
| IC1 | 8-759-175-87 | IC LC7218-ST | |
| IC2 | 8-759-090-40 | IC LA1831 | |
| IC501 | 8-759-821-93 | IC LA5601 | |
| IC502 | 8-759-634-84 | IC M50255P | |
| IC601 | 8-759-634-51 | IC M5218AP | (AEP, G, UK, IT, EE) |
| IC602 | 8-759-000-48 | IC MC14052BCP | |
| IC603 | 8-759-000-48 | IC MC14052BCP | (H650:EXCEPT AEP, G) |
| IC605 | 8-759-145-58 | IC UPC4558C | |
| IC606 | 8-759-145-58 | IC UPC4558C | |
| IC701 | 8-759-603-14 | IC M5229P | |
| IC731 | 8-759-081-01 | IC NJU7305L | |
| IC751 | 8-759-603-14 | IC M5229P | |
| | | < IFT > | |
| IFT1 | 1-404-853-11 | TRANSFORMER, IF(CERAMIC FILTER) | |
| | | < JACK > | |
| J601 | 1-764-767-11 | JACK, PIN 2P(MD/PHONO)(MD/AUX) | |
| J602 | 1-764-767-11 | JACK, PIN 2P(LINE OUT) | |
| J801 | 1-764-767-11 | JACK, PIN 2P(SURROUND SPEAKER) | (E, AUS, EA, MX, MY, SP) |
| | | < COIL > | |
| L1 | 1-408-425-00 | INDUCTOR 220uH | (AEP, UK, EE) |
| L3 | 1-410-496-11 | INDUCTOR 1.5mH | |
| * L801 | 1-410-858-11 | INDUCTOR 0uH | (G, IT) |
| * L851 | 1-410-858-11 | INDUCTOR 0uH | (G, IT) |
| L1001 | 1-410-521-11 | INDUCTOR 100uH | (G, Canadian, IT) |
| | | < TRANSISTOR > | |
| Q1 | 8-729-230-XX | TRANSISTOR 2SC2669OY-TPE4 | |
| Q2 | 8-729-230-XX | TRANSISTOR 2SC2669OY-TPE4 | (G, IT) |
| Q3 | 8-729-900-61 | TRANSISTOR DTA114ES | |
| Q4 | 8-729-119-76 | TRANSISTOR 2SA1175-HFE | (EXCEPT G, Canadian, IT) |
| Q5 | 8-729-900-80 | TRANSISTOR DTC114ES | (EXCEPT G, Canadian, IT) |
| Q6 | 8-729-900-80 | TRANSISTOR DTC114ES | (EXCEPT G, Canadian, IT) |
| Q7 | 8-729-900-80 | TRANSISTOR DTC114ES | (EXCEPT G, Canadian, IT) |
| Q8 | 8-729-119-76 | TRANSISTOR 2SA1175-HFE | (EXCEPT G, Canadian, IT) |
| Q9 | 8-729-900-80 | TRANSISTOR DTC114ES | (EXCEPT G, Canadian, IT) |
| Q10 | 8-729-201-83 | TRANSISTOR 2SC3112 | |
| Q11 | 8-729-202-67 | TRANSISTOR 2SK246-GR3 | |
| Q12 | 8-729-201-83 | TRANSISTOR 2SC3112 | (AEP, UK, EE) |
| Q13 | 8-729-202-67 | TRANSISTOR 2SK246-GR3 | (AEP, UK, EE) |
| Q14 | 8-729-119-78 | TRANSISTOR 2SC403SP-51 | |
| Q15 | 8-729-119-78 | TRANSISTOR 2SC403SP-51 | |
| Q501 | 8-729-900-89 | TRANSISTOR DTC144ES | |
| Q503 | 8-729-900-63 | TRANSISTOR DTA124ES | |
| Q599 | 8-729-900-63 | TRANSISTOR DTA124ES | |
| Q638 | 8-729-900-80 | TRANSISTOR DTC114ES(E, AUS, EA, MX, MY, SP) | |
| Q639 | 8-729-141-26 | TRANSISTOR 2SC3622A-LK | |
| Q688 | 8-729-900-80 | TRANSISTOR DTC114ES(E, AUS, EA, MX, MY, SP) | |
| Q689 | 8-729-141-26 | TRANSISTOR 2SC3622A-LK | |
| Q701 | 8-729-141-26 | TRANSISTOR 2SC3622A-LK | |
| Q702 | 8-729-202-67 | TRANSISTOR 2SK246-GR3 | |
| Q731 | 8-729-900-63 | TRANSISTOR DTA124ES | |
| Q751 | 8-729-141-26 | TRANSISTOR 2SC3622A-LK | |
| | | < RESISTOR > | |
| R1 | 1-249-411-11 | CARBON 330 5% 1/4W | |
| R2 | 1-249-411-11 | CARBON 330 5% 1/4W | |
| R3 | 1-247-891-00 | CARBON 330K 5% 1/4W | |
| R4 | 1-249-411-11 | CARBON 330 5% 1/4W | |
| R5 | 1-247-891-00 | CARBON 330K 5% 1/4W | (G, IT) |
| R6 | 1-249-411-11 | CARBON 330 5% 1/4W | (G, IT) |
| R7 | 1-247-807-31 | CARBON 100 5% 1/4W | |
| R8 | 1-249-433-11 | CARBON 22K 5% 1/4W | (EXCEPT G, Canadian, IT) |
| R9 | 1-249-437-11 | CARBON 47K 5% 1/4W | (AEP, UK, EE) |
| R9 | 1-247-903-00 | CARBON 1M 5% 1/4W | (E, AUS, EA, MX, MY, SP) |
| R10 | 1-247-903-00 | CARBON 1M 5% 1/4W | (AEP, UK, EE) |
| R11 | 1-249-425-11 | CARBON 4.7K 5% 1/4W | (EXCEPT G, Canadian, IT) |
| R12 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R13 | 1-249-437-11 | CARBON 47K 5% 1/4W | |
| R16 | 1-249-425-11 | CARBON 4.7K 5% 1/4W | (EXCEPT G, Canadian, IT) |
| R17 | 1-249-425-11 | CARBON 4.7K 5% 1/4W | (EXCEPT G, Canadian, IT) |
| R18 | 1-249-429-11 | CARBON 10K 5% 1/4W | (EXCEPT G, Canadian, IT) |
| R19 | 1-249-429-11 | CARBON 10K 5% 1/4W | (EXCEPT G, Canadian, IT) |

# MAIN

| Ref. No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| R20 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | (EXCEPT G, Canadian, IT) |
| R21 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W | |
| R22 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R23 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R24 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | |
| R25 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R26 | 1-249-414-11 | CARBON | 560 | 5% | 1/4W | |
| R27 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R28 | 1-249-410-11 | CARBON | 270 | 5% | 1/4W | |
| R29 | 1-249-423-11 | CARBON | 3.3K | 5% | 1/4W | |
| R30 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | (AEP, UK, EE) |
| R31 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | (AEP, UK, EE) |
| R32 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | (AEP, UK, EE) |
| R33 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W | (AEP, UK, EE) |
| R34 | 1-249-414-11 | CARBON | 560 | 5% | 1/4W | (AEP, UK, EE) |
| R35 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | (AEP, UK, EE) |
| R36 | 1-249-410-11 | CARBON | 270 | 5% | 1/4W | (AEP, UK, EE) |
| R37 | 1-249-423-11 | CARBON | 3.3K | 5% | 1/4W | (AEP, UK, EE) |
| R38 | 1-249-401-11 | CARBON | 47 | 5% | 1/4W | |
| R39 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W | |
| R40 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R41 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R42 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R43 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R44 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R45 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R46 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R47 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R48 | 1-249-399-11 | CARBON | 33 | 5% | 1/4W | |
| R50 | 1-247-848-11 | CARBON | 5.1K | 5% | 1/4W | |
| R51 | 1-249-412-11 | CARBON | 390 | 5% | 1/4W | |
| R52 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R53 | 1-247-842-11 | CARBON | 3K | 5% | 1/4W | |
| R54 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R55 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R56 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R57 | 1-249-430-11 | CARBON | 12K | 5% | 1/4W | (EXCEPT, G, IT) |
| R58 | 1-249-430-11 | CARBON | 12K | 5% | 1/4W | (G, IT) |
| R59 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | |
| R60 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | |
| R61 | 1-247-891-00 | CARBON | 330K | 5% | 1/4W | |
| R62 | 1-247-891-00 | CARBON | 330K | 5% | 1/4W | |
| R63 | 1-249-412-11 | CARBON | 390 | 5% | 1/4W | |
| R64 | 1-249-412-11 | CARBON | 390 | 5% | 1/4W | |
| R65 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | |
| R66 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | |
| R67 | 1-249-409-11 | CARBON | 220 | 5% | 1/4W | |

| Ref. No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| R68 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W | (H650:AEP, G/H650M) |
| R68 | 1-249-402-11 | CARBON | 56 | 5% | 1/4W | (E, AUS, EA, MX, MY, SP) |
| R69 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R70 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R74 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R80 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | (AEP, UK, EE) |
| R80 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W | (E, AUS, EA, MX, MY, SP) |
| R81 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | (AEP, UK, EE) |
| R81 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W | (E, AUS, EA, MX, MY, SP) |
| R99 | 1-249-420-11 | CARBON | 1.8K | 5% | 1/4W | (EXCEPT G, Canadian, IT) |
| R99 | 1-249-418-11 | CARBON | 1.2K | 5% | 1/4W | (G, Canadian, IT) |
| R501 | 1-249-393-11 | CARBON | 10 | 5% | 1/4W | |
| ⚠R502 | 1-217-637-00 | FUSIBLE | 1 | 5% | 1/4W | |
| R503 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W | |
| R505 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R506 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R507 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W | |
| R508 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R511 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R512 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R601 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R603 | 1-249-434-11 | CARBON | 27K | 5% | 1/4W | (H650:AEP, G/H650M) |
| R603 | 1-249-430-11 | CARBON | 12K | 5% | 1/4W | (E, AUS, EA, MX, MY, SP) |
| R604 | 1-249-438-11 | CARBON | 56K | 5% | 1/4W | |
| R605 | 1-249-415-11 | CARBON | 680 | 5% | 1/4W | (AEP, G, UK, IT, EE) |
| R606 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | (AEP, G, UK, IT, EE) |
| R607 | 1-247-897-11 | CARBON | 560K | 5% | 1/4W | (AEP, G, UK, IT, EE) |
| R608 | 1-247-895-00 | CARBON | 470K | 5% | 1/4W | |
| R610 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W | (AEP, G, UK, IT, EE) |
| R611 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R613 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | (E, AUS, EA, MX, MY, SP) |
| R614 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | |
| R615 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | (H650:EXCEPT AEP, G/H650M:Canadian) |
| R616 | 1-247-864-11 | CARBON | 24K | 5% | 1/4W | |
| R617 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | |
| R619 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | |
| R620 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | (G, IT) |

| | |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.<br>Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.<br>Ne les remplacer que par une pièce portant le numéro spécifié. |

| Ref.No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| R631 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R632 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R633 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| | | | | | | (H650:EXCEPT AEP, G) |
| R634 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| | | | | | | (H650:EXCEPT AEP, G) |
| R635 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| | | | | | | (H650:EXCEPT AEP, G) |
| R638 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R639 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R645 | 1-247-887-00 | CARBON | 220K | 5% | 1/4W | |
| R647 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R648 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R649 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R651 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R653 | 1-249-434-11 | CARBON | 27K | 5% | 1/4W | |
| | | | | | | (H650:AEP, G/H650M) |
| R653 | 1-249-430-11 | CARBON | 12K | 5% | 1/4W | |
| | | | | | | (E, AUS, EA, MX, MY, SP) |
| R654 | 1-249-438-11 | CARBON | 56K | 5% | 1/4W | |
| R655 | 1-249-415-11 | CARBON | 680 | 5% | 1/4W | |
| | | | | | | (AEP, UK, IT, EE) |
| R656 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | |
| | | | | | | (AEP, G, UK, IT, EE) |
| R657 | 1-247-897-11 | CARBON | 560K | 5% | 1/4W | |
| | | | | | | (AEP, G, UK, IT, EE) |
| R658 | 1-247-895-00 | CARBON | 470K | 5% | 1/4W | |
| R660 | 1-247-807-31 | CARBON | 100 | 5% | 1/4W | |
| | | | | | | (AEP, G, UK, IT, EE) |
| R661 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R663 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | |
| | | | | | | (E, AUS, EA, MX, MY, SP) |
| R664 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | |
| R665 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | |
| | | | | | | (H650:EXCEPT AEP, G/H650M:Canadian) |
| R665 | 1-249-415-11 | CARBON | 680 | 5% | 1/4W | (G, IT) |
| R666 | 1-247-864-11 | CARBON | 24K | 5% | 1/4W | |
| R667 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | |
| R669 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | |
| R670 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | (G, IT) |
| R688 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R689 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R695 | 1-247-887-00 | CARBON | 220K | 5% | 1/4W | |
| R696 | 1-247-887-00 | CARBON | 220K | 5% | 1/4W | (EE) |
| R697 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R698 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R699 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R701 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W | |
| R702 | 1-247-854-11 | CARBON | 9.1K | 5% | 1/4W | |
| R704 | 1-247-903-00 | CARBON | 1M | 5% | 1/4W | |
| R705 | 1-247-903-00 | CARBON | 1M | 5% | 1/4W | |
| R706 | 1-247-903-00 | CARBON | 1M | 5% | 1/4W | |
| R707 | 1-247-903-00 | CARBON | 1M | 5% | 1/4W | |
| R708 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W | |
| R709 | 1-247-903-00 | CARBON | 1M | 5% | 1/4W | |
| R710 | 1-247-903-00 | CARBON | 1M | 5% | 1/4W | |
| R711 | 1-247-895-00 | CARBON | 470K | 5% | 1/4W | |
| R712 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | |
| R714 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R716 | 1-247-887-00 | CARBON | 220K | 5% | 1/4W | |
| R717 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | |
| R731 | 1-247-903-00 | CARBON | 1M | 5% | 1/4W | |
| R732 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | |
| R733 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R734 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R735 | 1-247-816-11 | CARBON | 240 | 5% | 1/4W | |
| R736 | 1-249-442-11 | CARBON | 510 | 5% | 1/4W | |
| R751 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W | |
| R752 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R754 | 1-247-903-00 | CARBON | 1M | 5% | 1/4W | |
| R755 | 1-247-903-00 | CARBON | 1M | 5% | 1/4W | |
| R756 | 1-247-903-00 | CARBON | 1M | 5% | 1/4W | |
| R757 | 1-247-903-00 | CARBON | 1M | 5% | 1/4W | |
| R758 | 1-249-427-11 | CARBON | 6.8K | 5% | 1/4W | |
| R759 | 1-247-903-00 | CARBON | 1M | 5% | 1/4W | |
| R760 | 1-247-903-00 | CARBON | 1M | 5% | 1/4W | |
| R761 | 1-247-895-00 | CARBON | 470K | 5% | 1/4W | |
| R762 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | |
| R764 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R766 | 1-247-887-00 | CARBON | 220K | 5% | 1/4W | |
| R849 | 1-249-389-11 | CARBON | 4.7 | 5% | 1/4W | (G, IT) |
| R899 | 1-249-389-11 | CARBON | 4.7 | 5% | 1/4W | (G, IT) |
| R1000 | 1-249-395-11 | CARBON | 15 | 5% | 1/4W | |
| | | | | | | (E, AUS, EA, MX, MY, SP) |
| | | < VARIABLE RESISTOR > | | | | |
| RV1 | 1-238-601-11 | RES, ADJ, CARBON 22K | | | | |
| | | | | | | (FM TUND LIGHTING LEVEL) |
| RV701 | 1-223-652-11 | RES, VAR, CARBON 100K/100K(MAIN VOLUME) | | | | |
| | | < RELAY > | | | | |
| RY801 | 1-515-920-11 | RELAY (24V) | | | | |
| | | < SWITCH > | | | | |
| S601 | 1-692-884-11 | SWITCH, SLIDE(SPEAKER) (AEP, G, UK, IT, EE) | | | | |
| | | < TRANSFORMER > | | | | |
| T1 | 1-402-424-11 | COIL (ANT, SW3)(H650:EXCEPT AEP, G) | | | | |
| T2 | 1-402-960-11 | COIL (OSC SW3)(H650:EXCEPT AEP, G) | | | | |

# MAIN MD(AX) MD(BX)

| Ref.No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| | | < TERMINAL > | | | |
| TB1 | 1-537-488-11 | TERMINAL BOARD (ANT)(AEP,G,UK,IT,EE) | | | |
| TB1 | 1-537-238-21 | TERMINAL BOARD (H650:EXCEPT AEP,G/H650M:Canadian) | | | |
| | | < TERMINAL > | | | |
| TM801 | 1-537-238-11 | TERMINAL BOARD(SPEAKER) | | | |
| | | < CRYSTAL > | | | |
| X1 | 1-579-585-11 | VIBRATOR, CRYSTAL(7.2MHz) | | | |
| X2 | 1-577-075-11 | OSCILLATOR, CERAMIC(456kHz) | | | |
| X3 | 1-579-777-11 | DISCRIMINATOR, CERAMIC(10.7MHz) | | | |
| ********** | | | | | |
| * | A-2006-623-A | MD(AX)BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | < CAPACITOR > | | | |
| C11 | 1-163-131-00 | CERAMIC CHIP | 390PF | 5% | 50V |
| C12 | 1-136-157-00 | FILM | 0.022uF | 5% | 50V |
| C13 | 1-124-234-00 | ELECT | 22uF | 20% | 16V |
| C18 | 1-163-117-00 | CERAMIC CHIP | 100PF | 5% | 50V |
| C21 | 1-163-131-00 | CERAMIC CHIP | 390PF | 5% | 50V |
| C22 | 1-136-157-00 | FILM | 0.022uF | 5% | 50V |
| C23 | 1-124-234-00 | ELECT | 22uF | 20% | 16V |
| C28 | 1-163-117-00 | CERAMIC CHIP | 100PF | 5% | 50V |
| C31 | 1-124-234-00 | ELECT | 22uF | 20% | 16V |
| C32 | 1-124-234-00 | ELECT | 22uF | 20% | 16V |
| C72 | 1-124-499-11 | ELECT, NONPOLAR | 1uF | 20% | 50V |
| | | < JACK > | | | |
| * CNJ31 | 1-580-782-11 | CONNECTOR, BOARD TO BOARD | | | |
| * CNJ72 | 1-580-411-11 | SOCKET, CONNECTOR 4P | | | |
| | | < CONNECTOR > | | | |
| * CNP32 | 1-580-772-11 | PIN, CONNECTOR (PC BOARD) 4P | | | |
| * CNP71 | 1-564-719-11 | PIN, CONNECTOR (SMALL TYPE) 3P | | | |
| | | < IC > | | | |
| IC31A | 8-759-106-02 | IC UPC4570G2 | | | |
| | | < JUMPER RESISTOR > | | | |
| JW1 | 1-216-295-00 | METAL CHIP | 0 | 5% | 1/10W |
| JW51 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| JW52 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| JW53 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| JW54 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |

| Ref.No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| | | < TRANSISTOR > | | | |
| Q71A | 8-729-216-22 | TRANSISTOR 2SA1162-G | | | |
| | | < RESISTOR > | | | |
| R11 | 1-216-099-00 | METAL CHIP | 120K | 5% | 1/10W |
| R12 | 1-216-025-00 | METAL CHIP | 100 | 5% | 1/10W |
| R13 | 1-216-100-00 | METAL GLAZE | 130K | 5% | 1/10W |
| R14 | 1-216-067-00 | METAL CHIP | 5.6K | 5% | 1/10W |
| R21 | 1-216-099-00 | METAL CHIP | 120K | 5% | 1/10W |
| R22 | 1-216-025-00 | METAL CHIP | 100 | 5% | 1/10W |
| R23 | 1-216-100-00 | METAL GLAZE | 130K | 5% | 1/10W |
| R24 | 1-216-067-00 | METAL CHIP | 5.6K | 5% | 1/10W |
| R31 | 1-216-033-00 | METAL CHIP | 220 | 5% | 1/10W |
| R32 | 1-216-033-00 | METAL CHIP | 220 | 5% | 1/10W |
| R71 | 1-216-082-00 | METAL GLAZE | 24K | 5% | 1/10W |
| R72 | 1-216-081-00 | METAL CHIP | 22K | 5% | 1/10W |
| R73 | 1-216-089-91 | METAL GLAZE | 47K | 5% | 1/10W |
| R74 | 1-216-089-91 | METAL GLAZE | 47K | 5% | 1/10W |
| | | < VARIABLE RESISTOR > | | | |
| RV11A | 1-241-761-11 | RES, ADJ, CARBON 1K(PB(L)LEVEL) | | | |
| RV21A | 1-241-761-11 | RES, ADJ, CARBON 1K(PB(R)LEVEL) | | | |
| RV71A | 1-241-630-11 | RES, ADJ, CARBON 10K(NORMAL SPEED) | | | |
| RV72A | 1-241-630-11 | RES, ADJ, CARBON 10K(HIGHT SPEED) | | | |
| ********** | | | | | |
| * | A-2007-134-A | MD(BX)BOARD, COMPLETE | | | |
| | | ********** | | | |
| | | < CAPACITOR > | | | |
| C11 | 1-163-131-00 | CERAMIC CHIP | 390PF | 5% | 50V |
| C12 | 1-163-117-00 | CERAMIC CHIP | 100PF | 5% | 50V |
| C13 | 1-136-153-00 | FILM | 0.01uF | 5% | 50V |
| C14 | 1-126-177-11 | ELECT | 100uF | 20% | 10V |
| C15 | 1-124-234-00 | ELECT | 22uF | 20% | 16V |
| C16 | 1-136-273-91 | FILM | 75PF | 5% | 630V |
| C17 | 1-164-080-11 | CERAMIC | 390PF | 10% | 50V |
| C18 | 1-163-103-00 | CERAMIC CHIP | 27PF | 5% | 50V |
| C21 | 1-163-131-00 | CERAMIC CHIP | 390PF | 5% | 50V |
| C22 | 1-163-117-00 | CERAMIC CHIP | 100PF | 5% | 50V |
| C23 | 1-136-153-00 | FILM | 0.01uF | 5% | 50V |
| C24 | 1-126-177-11 | ELECT | 100uF | 20% | 10V |
| C25 | 1-124-234-00 | ELECT | 22uF | 20% | 16V |
| C26 | 1-136-273-91 | FILM | 75PF | 5% | 630V |
| C27 | 1-164-080-11 | CERAMIC | 390PF | 10% | 50V |
| C28 | 1-163-103-00 | CERAMIC CHIP | 27PF | 5% | 50V |
| C31 | 1-124-234-00 | ELECT | 22uF | 20% | 16V |
| C32 | 1-124-234-00 | ELECT | 22uF | 20% | 16V |
| C33 | 1-124-234-00 | ELECT | 22uF | 20% | 16V |

| Ref.No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C51 | 1-163-019-00 | CERAMIC CHIP | 0.0068uF | 10% | 50V |
| C52 | 1-163-019-00 | CERAMIC CHIP | 0.0068uF | 10% | 50V |
| C53 | 1-163-022-00 | CERAMIC CHIP | 0.012uF | 10% | 50V |
| C54 | 1-136-559-11 | FILM | 0.0047uF | 5% | 630V |
| C56 | 1-164-505-11 | CERAMIC CHIP | 2.2uF | | 16V |
| C57 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V |
| C58 | 1-163-024-00 | CERAMIC CHIP | 0.018uF | 10% | 50V |
| C72 | 1-124-499-11 | ELECT, NONPOLAR | 1uF | 20% | 50V |
| | | < CONNECTOR > | | | |
| * CNJ31 | 1-580-782-11 | CONNECTOR, BOARD TO BOARD | | | |
| * CNJ33 | 1-580-782-11 | CONNECTOR, BOARD TO BOARD | | | |
| * CNJ72 | 1-580-411-11 | SOCKET, CONNECTOR 4P | | | |
| | | < CONNECTOR > | | | |
| * CNP32 | 1-580-781-11 | PIN, CONNECTOR (PC BOARD) 7P | | | |
| * CNP71 | 1-564-719-11 | PIN, CONNECTOR (SMALL TYPE) 3P | | | |
| | | < IC > | | | |
| IC32 | 8-759-106-02 | IC UPC4570G2 | | | |
| IC31B | 8-759-249-21 | IC uPC1330GR-T1 | | | |
| | | < JUMPER RESISTOR > | | | |
| JW1 | 1-216-295-00 | METAL CHIP | 0 | 5% | 1/10W |
| JW2 | 1-216-295-00 | METAL CHIP | 0 | 5% | 1/10W |
| JW11 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| JW12 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| JW13 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| JW14 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| JW15 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| JW16 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| JW17 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| JW18 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| JW19 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| JW20 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| JW21 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| JW22 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| JW23 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| JW24 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| JW25 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| JW26 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| JW27 | 1-216-296-91 | METAL GLAZE | 0 | 5% | 1/8W |
| | | < COIL > | | | |
| L11 | 1-410-780-11 | INDUCTOR | 27mH | | |
| L21 | 1-410-780-11 | INDUCTOR | 27mH | | |

| Ref.No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| | | < TRANSISTOR > | | | |
| Q51 | 8-729-011-92 | TRANSISTOR | 2SC2001TP-K1K2 | | |
| Q52 | 8-729-011-92 | TRANSISTOR | 2SC2001TP-K1K2 | | |
| Q53 | 8-729-111-29 | TRANSISTOR | 2SD1616A-K | | |
| Q71B | 8-729-216-22 | TRANSISTOR | 2SA1162-G | | |
| | | < RESISTOR > | | | |
| R11 | 1-216-099-00 | METAL CHIP | 120K | 5% | 1/10W |
| R12 | 1-216-033-00 | METAL CHIP | 220 | 5% | 1/10W |
| R13 | 1-216-081-00 | METAL CHIP | 22K | 5% | 1/10W |
| R14 | 1-216-075-00 | METAL CHIP | 12K | 5% | 1/10W |
| R15 | 1-216-107-00 | METAL CHIP | 270K | 5% | 1/10W |
| R16 | 1-249-430-11 | CARBON | 12K | 5% | 1/4W |
| R21 | 1-216-099-00 | METAL CHIP | 120K | 5% | 1/10W |
| R22 | 1-216-033-00 | METAL CHIP | 220 | 5% | 1/10W |
| R23 | 1-216-081-00 | METAL CHIP | 22K | 5% | 1/10W |
| R24 | 1-216-075-00 | METAL CHIP | 12K | 5% | 1/10W |
| R25 | 1-216-107-00 | METAL CHIP | 270K | 5% | 1/10W |
| R26 | 1-249-430-11 | CARBON | 12K | 5% | 1/4W |
| R31 | 1-216-033-00 | METAL CHIP | 220 | 5% | 1/10W |
| R32 | 1-216-033-00 | METAL CHIP | 220 | 5% | 1/10W |
| R33 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R41 | 1-249-393-11 | CARBON | 10 | 5% | 1/4W |
| R42 | 1-249-393-11 | CARBON | 10 | 5% | 1/4W |
| R51 | 1-216-075-00 | METAL CHIP | 12K | 5% | 1/10W |
| R52 | 1-216-075-00 | METAL CHIP | 12K | 5% | 1/10W |
| R53 | 1-216-073-00 | METAL CHIP | 10K | 5% | 1/10W |
| R54 | 1-216-309-00 | METAL CHIP | 5.6 | 5% | 1/10W |
| R55 | 1-216-309-00 | METAL CHIP | 5.6 | 5% | 1/10W |
| R56 | 1-216-298-00 | METAL CHIP | 2.2 | 5% | 1/10W |
| R71 | 1-216-082-00 | METAL GLAZE | 24K | 5% | 1/10W |
| R72 | 1-216-081-00 | METAL CHIP | 22K | 5% | 1/10W |
| R73 | 1-216-089-91 | METAL GLAZE | 47K | 5% | 1/10W |
| R74 | 1-216-089-91 | METAL GLAZE | 47K | 5% | 1/10W |
| | | < VARIABLE RESISTOR > | | | |
| RV12 | 1-238-551-11 | RES, ADJ, CARBON 220K(REC BIAS(L)) | | | |
| RV22 | 1-238-551-11 | RES, ADJ, CARBON 220K(REC BIAS(R)) | | | |
| RV11B | 1-241-761-11 | RES, ADJ, CARBON 1K(PB(L)LEVEL) | | | |
| RV21B | 1-241-761-11 | RES, ADJ, CARBON 1K(PB(R)LEVEL) | | | |
| RV71B | 1-241-630-11 | RES, ADJ, CARBON 10K(NORMAL SPEED) | | | |
| RV72B | 1-241-630-11 | RES, ADJ, CARBON 10K(HIGHT SPEED) | | | |
| | | < TRANSFORMER > | | | |
| T51 | 1-406-419-11 | COIL, BIAS OSCILLATION | | | |

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# POWER

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| * | A-4369-044-A | POWER BOARD, COMPLETE(H650:EXCEPT AEP, G) | | | |
| | | ********** | | | |
| * | A-4365-992-A | POWER BOARD, COMPLETE(Canadian) | | | |
| | | ********** | | | |
| * | A-4369-000-A | POWER BOARD, COMPLETE(AEP, EE) | | | |
| | | ********** | | | |
| * | A-4369-008-A | POWER BOARD, COMPLETE(G, IT) | | | |
| | | ********** | | | |
| * | A-4369-020-A | POWER BOARD, COMPLETE(UK) | | | |
| | | ********** | | | |
| | | < CAPACITOR > | | | |
| C801 | 1-162-217-31 | CERAMIC | 56PF | 5% | 50V (G, IT) |
| C802 | 1-124-903-11 | ELECT | 1uF | 20% | 50V |
| C803 | 1-162-290-31 | CERAMIC | 470PF | 10% | 50V |
| C804 | 1-162-282-31 | CERAMIC | 100PF | 10% | 50V (EXCEPT, G, IT) |
| C804 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V (G, IT) |
| C805 | 1-124-910-11 | ELECT | 47uF | 20% | 50V |
| C807 | 1-124-910-11 | ELECT | 47uF | 20% | 50V |
| C808 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C809 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C831 | 1-124-917-11 | ELECT | 33uF | 20% | 63V |
| C832 | 1-124-917-11 | ELECT | 33uF | 20% | 63V |
| C833 | 1-136-161-00 | FILM | 0.047uF | 5% | 50V |
| C834 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V (G, IT) |
| C851 | 1-162-217-31 | CERAMIC | 56PF | 5% | 50V (G, IT) |
| C852 | 1-124-903-11 | ELECT | 1uF | 20% | 50V |
| C853 | 1-162-290-31 | CERAMIC | 470PF | 10% | 50V |
| C854 | 1-162-282-31 | CERAMIC | 100PF | 10% | 50V (EXCEPT, G, IT) |
| C854 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V (G, IT) |
| C855 | 1-124-910-11 | ELECT | 47uF | 20% | 50V |
| C857 | 1-124-910-11 | ELECT | 47uF | 20% | 50V |
| C858 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C859 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C871 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C872 | 1-126-176-11 | ELECT | 220uF | 20% | 10V |
| C873 | 1-124-902-00 | ELECT | 0.47uF | 20% | 50V |
| C874 | 1-124-916-11 | ELECT | 22uF | 20% | 63V |
| C901 | 1-126-224-11 | ELECT | 4700uF | 20% | 42V |
| C902 | 1-126-224-11 | ELECT | 4700uF | 20% | 42V |
| C903 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C904 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C906 | 1-126-937-11 | ELECT | 4700uF | 20% | 16V |
| C907 | 1-124-887-00 | ELECT | 3300uF | 20% | 16V |
| C908 | 1-124-925-11 | ELECT | 2.2uF | 20% | 100V |
| C909 | 1-124-925-11 | ELECT | 2.2uF | 20% | 100V |
| C910 | 1-124-925-11 | ELECT | 2.2uF | 20% | 100V |

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C911 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| C912 | 1-124-903-11 | ELECT | 1uF | 20% | 50V |
| C913 | 1-124-925-11 | ELECT | 2.2uF | 20% | 100V |
| C914 | 1-126-935-11 | ELECT | 470uF | 20% | 16V |
| C915 | 1-126-935-11 | ELECT | 470uF | 20% | 16V |
| C916 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C917 | 1-124-477-11 | ELECT | 47uF | 20% | 25V |
| C918 | 1-124-477-11 | ELECT | 47uF | 20% | 25V |
| C919 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C920 | 1-124-903-11 | ELECT | 1uF | 20% | 50V |
| C922 | 1-124-910-11 | ELECT | 47uF | 20% | 50V |
| C923 | 1-124-910-11 | ELECT | 47uF | 20% | 50V |
| C949 | 1-161-379-00 | CERAMIC | 0.01uF | 20% | 25V |
| | | < CONNECTOR > | | | |
| * CN801 | 1-564-705-11 | PIN, CONNECTOR (SMALL TYPE) 3P | | | |
| CN901 | 1-764-308-11 | HOUSING, CONNECTOR(PC BOARD) 8P | | | |
| CN902 | 1-564-510-11 | PLUG, CONNECTOR 7P | | | |
| CN903 | 1-695-695-11 | CONNECTOR, FFC/FPC 11P | | | |
| CN904 | 1-695-330-31 | PIN, CONNECTOR (PC BOARD) 7P | | | |
| | | < DIODE > | | | |
| D801 | 8-719-987-63 | DIODE | 1N4148M | | |
| D851 | 8-719-987-63 | DIODE | 1N4148M | | |
| D901 | 8-719-987-63 | DIODE | 1N4148M | | |
| D902 | 8-719-987-63 | DIODE | 1N4148M | | |
| D903 | 8-719-200-82 | DIODE | 11ES2 | | |
| D904 | 8-719-200-82 | DIODE | 11ES2 | | |
| D905 | 8-719-200-82 | DIODE | 11ES2 | | |
| D906 | 8-719-200-82 | DIODE | 11ES2 | | |
| D909 | 8-719-987-63 | DIODE | 1N4148M | | |
| D910 | 8-719-010-75 | DIODE | UZ-12BSC-TP | | |
| D911 | 8-719-109-93 | DIODE | RD6.2ESB2 | | |
| D912 | 8-719-013-67 | DIODE | UZ-30BSD-TP | | |
| | | < IC > | | | |
| IC801 | 8-749-900-96 | IC | STK-4142MK2(AEP, G, UK, IT, EE) | | |
| IC801 | 8-749-920-09 | IC | STK-4152MK2K (E, AUS, EA, MX, MY, SP, Canadian) | | |
| IC802 | 8-759-111-68 | IC | UPC1237HA | | |
| IC901 | 8-759-602-66 | IC | M5230L-A | | |
| | | < TRANSISTOR > | | | |
| Q801 | 8-729-140-84 | TRANSISTOR | 2SC1841-PAFAEA | | |
| Q851 | 8-729-140-84 | TRANSISTOR | 2SC1841-PAFAEA | | |
| Q871 | 8-729-900-63 | TRANSISTOR | DTA124ES | | |
| Q901 | 8-729-900-89 | TRANSISTOR | DTC144ES | | |
| Q902 | 8-729-141-83 | TRANSISTOR | 2SB1094-LK | | |
| Q903 | 8-729-119-76 | TRANSISTOR | 2SA1175-HFE | | |

| Ref. No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| Q904 | 8-729-209-15 | TRANSISTOR | 2SD2012 | | | |
| Q905 | 8-729-119-78 | TRANSISTOR | 2SC403SP-51 | | | |
| Q906 | 8-729-018-60 | TRANSISTOR | 2SD2012-LC | | | |
| Q907 | 8-729-209-15 | TRANSISTOR | 2SD2012 | | | |
| Q908 | 8-729-900-80 | TRANSISTOR | DTC114ES | | | |
| Q909 | 8-729-900-80 | TRANSISTOR | DTC114ES | | | |
| Q910 | 8-729-018-59 | TRANSISTOR | 2SB1375-LC | | | |
| | | < RESISTOR > | | | | |
| R801 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R802 | 1-249-438-11 | CARBON | 56K | 5% | 1/4W | |
| R803 | 1-249-414-11 | CARBON | 560 | 5% | 1/4W | |
| R804 | 1-249-438-11 | CARBON | 56K | 5% | 1/4W | |
| ⚠R805 | 1-212-849-00 | FUSIBLE | 4.7 | 5% | 1/4W | F |
| R806 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | |
| R807 | 1-247-756-11 | CARBON | 2.2K | 5% | 1/2W | |
| R808 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R809 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | |
| R810 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R811 | 1-217-151-00 | RES, METAL PLATE | 0.22 | | 2W | |
| R812 | 1-249-393-11 | CARBON | 10 | 5% | 1/4W | |
| R813 | 1-249-438-11 | CARBON | 56K | 5% | 1/4W | |
| ⚠R831 | 1-212-881-11 | FUSIBLE | 100 | 5% | 1/4W | F |
| ⚠R832 | 1-212-881-11 | FUSIBLE | 100 | 5% | 1/4W | F |
| R851 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R852 | 1-249-438-11 | CARBON | 56K | 5% | 1/4W | |
| R853 | 1-249-414-11 | CARBON | 560 | 5% | 1/4W | |
| R854 | 1-249-438-11 | CARBON | 56K | 5% | 1/4W | |
| ⚠R855 | 1-212-881-11 | FUSIBLE | 100 | 5% | 1/4W | F |
| R856 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | |
| R857 | 1-247-756-11 | CARBON | 2.2K | 5% | 1/2W | |
| R858 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R859 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | |
| R860 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R861 | 1-217-151-00 | RES, METAL PLATE | 0.22 | | 2W | |
| R862 | 1-249-393-11 | CARBON | 10 | 5% | 1/4W | |
| R863 | 1-249-437-11 | CARBON | 47K | 5% | 1/4W | |
| R871 | 1-249-433-11 | CARBON | 22K | 5% | 1/4W | |
| R872 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| R873 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R874 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | |
| R875 | 1-249-439-11 | CARBON | 68K | 5% | 1/4W | |
| R876 | 1-249-422-11 | CARBON | 2.7K | 5% | 1/4W | |
| R901 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R902 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R904 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R905 | 1-247-903-00 | CARBON | 1M | 5% | 1/4W | |
| R906 | 1-249-409-11 | CARBON | 220 | 5% | 1/4W | |
| R907 | 1-249-409-11 | CARBON | 220 | 5% | 1/4W | |

| Ref. No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| R908 | 1-247-811-31 | CARBON | 150 | 5% | 1/4W | |
| R909 | 1-247-811-31 | CARBON | 150 | 5% | 1/4W | |
| R910 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | |
| R911 | 1-249-431-11 | CARBON | 15K | 5% | 1/4W | |
| R912 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R913 | 1-249-423-11 | CARBON | 3.3K | 5% | 1/4W | |
| ⚠R914 | 1-212-889-00 | FUSIBLE | 220 | 5% | 1/4W | F |
| R915 | 1-249-420-11 | CARBON | 1.8K | 5% | 1/4W | |
| ⚠R916 | 1-212-998-00 | FUSIBLE | 470 | 5% | 1/2W | F |
| ⚠R917 | 1-217-371-00 | FUSIBLE | 0.47 | 5% | 1/4W | F |
| ⚠R918 | 1-212-853-00 | FUSIBLE | 6.8 | 5% | 1/4W | F |
| R919 | 1-249-413-11 | CARBON | 470 | 5% | 1/4W | |
| R921 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| ⚠R922 | 1-212-881-11 | FUSIBLE | 100 | 5% | 1/4W | F |
| R923 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | |
| ********** | | | | | | |
| * | 1-651-089-11 | PS BOARD | | | | |
| | | ******** | | | | |
| | | < CAPACITOR > | | | | |
| C951 | 1-164-159-11 | CERAMIC | 0.1uF | | | 50V |
| C952 | 1-164-159-11 | CERAMIC | 0.1uF | | | 50V |
| | | < CONNECTOR > | | | | |
| CN951 | 1-764-309-11 | PIN, CONNECTOR (PC BOARD) 8P | | | | |
| * CN952 | 1-564-321-00 | PIN, CONNECTOR 2P | | | | |
| | | < DIODE > | | | | |
| D951 | 8-719-312-09 | DIODE RBA-402 | | | | |
| | | < FUSE > | | | | |
| ⚠F951 | 1-532-215-00 | FUSE(T800mA/250V) (EXCEPT Canadian) | | | | |
| ⚠F951 | 1-576-104-11 | FUSE(2A/250V) (Canadian) | | | | |
| ⚠F952 | 1-532-259-00 | FUSE(T1.6A/250V) (E, EA, MX, MY, SP) | | | | |
| | | < FUSE HOLDER > | | | | |
| * FH911 | 1-533-293-11 | FUSE HOLDER | | | | |
| * FH912 | 1-533-293-11 | FUSE HOLDER | | | | |
| * FH913 | 1-533-293-11 | FUSE HOLDER(E, EA, MX, MY, SP) | | | | |
| * FH914 | 1-533-293-11 | FUSE HOLDER(E, EA, MX, MY, SP) | | | | |
| | | < RESISTOR > | | | | |
| ⚠R951 | 1-219-134-11 | FUSIBLE | 0.1 | 10% | 1/4W | |
| ⚠R952 | 1-219-134-11 | FUSIBLE | 0.1 | 10% | 1/4W | |
| R953 | 1-202-725-00 | SOLID | 3.3M | 10% | 1/2W | (Canadian) |

| | |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.<br>Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.<br>Ne les remplacer que par une pièce portant le numéro spécifié. |

# PS SW SW-A

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| | | < SWITCH > | |
| ⚠S951 | 1-572-675-11 | SWITCH, POWER VOLTAGE CHANGE (110-120/220-240V) (E, EA, MX, MY, SP) | |
| | | < TRANSFORMER > | |
| ⚠PT951 | 1-423-966-11 | TRANSFORMER, POWER(Canadian) | |
| ⚠PT951 | 1-423-967-11 | TRANSFORMER, POWER(AEP, G, IT, EE) | |
| ⚠PT951 | 1-423-968-11 | TRANSFORMER, POWER(AUS, UK) | |
| ⚠PT951 | 1-423-969-11 | TRANSFORMER, POWER(E, EA, MX, MY, SP) | |
| ********** | | | |
| * | A-4369-047-A | SW BOARD, COMPLETE(E, AUS, EA, MX, MY, SP) ********** | |
| * | A-4365-995-A | SW BOARD, COMPLETE(Canadian) ********** | |
| * | A-4369-003-A | SW BOARD, COMPLETE(AEP, EE) ********** | |
| * | A-4369-011-A | SW BOARD, COMPLETE(G, IT) ********** | |
| * | A-4369-023-A | SW BOARD, COMPLETE(UK) ********** | |
| | | < CONNECTOR > | |
| CN3001 | 1-695-738-11 | CONNECTOR, FFC/FPC 18P | |
| CN3002 | 1-580-482-11 | SOCKET, CONNECTOR 7P | |
| | | < DIODE > | |
| D3007 | 8-719-032-83 | LED SEL5220S-TP(REC) | |
| D3008 | 8-719-033-06 | LED SEL5920A (PAUSE) | |
| D3009 | 8-719-032-83 | LED SEL5220S-TP(CD SYNCRO) | |
| D3010 | 8-719-032-83 | LED SEL5220S-TP(HIGHT SPEED DUBBING) | |
| D3011 | 8-719-032-87 | LED SEL5420S-TP(FWD) | |
| D3012 | 8-719-032-87 | LED SEL5420S-TP(REV) | |
| | | < RESISTOR > | |
| R3001 | 1-247-807-31 | CARBON 100 5% 1/4W | |
| R3002 | 1-249-406-11 | CARBON 120 5% 1/4W | |
| R3003 | 1-249-406-11 | CARBON 120 5% 1/4W | |
| R3004 | 1-247-811-31 | CARBON 150 5% 1/4W | |
| R3005 | 1-249-408-11 | CARBON 180 5% 1/4W | |
| R3006 | 1-249-409-11 | CARBON 220 5% 1/4W | |
| R3007 | 1-249-410-11 | CARBON 270 5% 1/4W | |
| R3008 | 1-249-411-11 | CARBON 330 5% 1/4W | |
| R3009 | 1-249-413-11 | CARBON 470 5% 1/4W | |
| R3010 | 1-249-414-11 | CARBON 560 5% 1/4W | |
| R3014 | 1-247-811-31 | CARBON 150 5% 1/4W | |
| R3015 | 1-249-409-11 | CARBON 220 5% 1/4W | |
| R3016 | 1-247-840-00 | CARBON 2.4K 5% 1/4W | |
| R3017 | 1-249-416-11 | CARBON 820 5% 1/4W | |
| R3018 | 1-249-418-11 | CARBON 1.2K 5% 1/4W | |
| R3020 | 1-249-426-11 | CARBON 5.6K 5% 1/4W | |
| R3022 | 1-249-420-11 | CARBON 1.8K 5% 1/4W | |
| R3023 | 1-249-414-11 | CARBON 560 5% 1/4W | |
| R3024 | 1-249-416-11 | CARBON 820 5% 1/4W | |
| R3027 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R3028 | 1-249-426-11 | CARBON 5.6K 5% 1/4W | |
| R3029 | 1-249-430-11 | CARBON 12K 5% 1/4W | |
| | | < SWITCH > | |
| S3001 | 1-572-184-11 | SWITCH, KEY BOARD(■STOP) | |
| S3002 | 1-572-184-11 | SWITCH, KEY BOARD(OPEN/CLOSE) | |
| S3003 | 1-572-184-11 | SWITCH, KEY BOARD(▶PLAY) | |
| S3004 | 1-572-184-11 | SWITCH, KEY BOARD(FF) | |
| S3005 | 1-572-184-11 | SWITCH, KEY BOARD(REW) | |
| S3006 | 1-572-184-11 | SWITCH, KEY BOARD(EDIT) | |
| S3007 | 1-572-184-11 | SWITCH, KEY BOARD(CLEAR) | |
| S3008 | 1-572-184-11 | SWITCH, KEY BOARD(CHECK) | |
| S3009 | 1-572-184-11 | SWITCH, KEY BOARD(TIME) | |
| S3010 | 1-572-184-11 | SWITCH, KEY BOARD(REPEAT) | |
| S3011 | 1-572-184-11 | SWITCH, KEY BOARD(PROGRAM) | |
| S3012 | 1-572-184-11 | SWITCH, KEY BOARD(SHUFFLE) | |
| S3013 | 1-572-184-11 | SWITCH, KEY BOARD(CONTINUE) | |
| S3015 | 1-572-184-11 | SWITCH, KEY BOARD(■STOP) | |
| S3018 | 1-572-184-11 | SWITCH, KEY BOARD(●REC) | |
| S3019 | 1-572-184-11 | SWITCH, KEY BOARD(HIGHT SPEED DUBBING) | |
| S3020 | 1-572-184-11 | SWITCH, KEY BOARD(CD SYNCHRO) | |
| S3022 | 1-572-184-11 | SWITCH, KEY BOARD(❙❙PAUSE) | |
| S3023 | 1-572-184-11 | SWITCH, KEY BOARD(●REC) | |
| S3024 | 1-572-184-11 | SWITCH, KEY BOARD(FF) | |
| S3025 | 1-572-378-11 | SWITCH, SLIDE(DIRECTION) | |
| S3026 | 1-572-184-11 | SWITCH, KEY BOARD(FWD) | |
| S3027 | 1-572-184-11 | SWITCH, KEY BOARD(REW) | |
| S3028 | 1-572-347-31 | SWITCH, SLIDE(DOLBY NR) | |
| ********** | | | |
| * | 1-638-020-11 | SW-A BOARD ********** | |
| | | < CONNECTOR > | |
| * CNP81 | 1-568-850-11 | SOCKET, CONNECTOR 7P | |
| | | < IC > | |
| IC81A | 8-749-924-10 | IC PHONT REFLECTOR NJL5165K-B(H1) | |
| | | < RESISTOR > | |
| R84 | 1-249-417-11 | CARBON 1K 5% 1/4W | |
| R85 | 1-249-408-11 | CARBON 180 5% 1/4W | |

| | |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.<br>Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.<br>Ne les remplacer que par une pièce portant le numéro spécifié. |

SW-A SW-B TC

| Ref.No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| | | < SWITCH > | | | |
| S81A | 1-571-958-11 | SWITCH, PUSH (1 KEY)(STOP DET) | | | |
| S82A | 1-571-281-21 | SWITCH, LEAF (CrO2 DET) | | | |
| S86A | 1-571-281-21 | SWITCH, LEAF (HALF DET) | | | |
| ********** | | | | | |
| * | 1-638-020-11 | SW-B BOARD | | | |
| | | ********** | | | |
| | | < CONNECTOR > | | | |
| * CNP81 | 1-568-850-11 | SOCKET, CONNECTOR 7P | | | |
| | | < IC > | | | |
| IC81B | 8-749-924-10 | IC PHONT REFLECTOR NJL5165K-B(H1) | | | |
| | | < RESISTOR > | | | |
| R81 | 1-249-414-11 | CARBON | 560 | 5% | 1/4W |
| R82 | 1-247-818-91 | CARBON | 300 | 5% | 1/4W |
| R83 | 1-247-834-11 | CARBON | 1.3K | 5% | 1/4W |
| R84 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W |
| R85 | 1-249-408-11 | CARBON | 180 | 5% | 1/4W |
| | | < SWITCH > | | | |
| S81B | 1-571-958-11 | SWITCH, PUSH (1 KEY)(STOP DET) | | | |
| S82B | 1-571-281-21 | SWITCH, LEAF (CrO2 DET) | | | |
| S84B | 1-571-281-21 | SWITCH, LEAF (ERASE PROOF)(SIDE A) | | | |
| S85B | 1-571-281-21 | SWITCH, LEAF (ERASE PROOF)(SIDE B) | | | |
| S86B | 1-571-281-21 | SWITCH, LEAF (HALF DET) | | | |
| ********** | | | | | |
| * | A-4365-994-A | TC BOARD, COMPLETE(Canadian) | | | |
| | | ********** | | | |
| * | A-4369-002-A | TC BOARD, COMPLETE(AEP, EE) | | | |
| | | ********** | | | |
| * | A-4369-010-A | TC BOARD, COMPLETE(G, IT) | | | |
| | | ********** | | | |
| * | A-4369-022-A | TC BOARD, COMPLETE(UK) | | | |
| | | ********** | | | |
| * | A-4369-046-A | TC BOARD, COMPLETE(E, AUS, EA, MX, MY, SP) | | | |
| | | ********** | | | |
| | | < CAPACITOR > | | | |
| C301 | 1-124-903-11 | ELECT | 1uF | 20% | 50V |
| C302 | 1-124-443-00 | ELECT | 100uF | 20% | 10V |
| C303 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C304 | 1-124-126-00 | ELECT | 47uF | 20% | 10V |
| C401 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V(G, IT) |
| C402 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V(G, IT) |
| C403 | 1-137-368-11 | FILM | 0.0047uF | 5% | 50V |
| C404 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C405 | 1-124-903-11 | ELECT | 1uF | 20% | 50V |
| C406 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C407 | 1-136-165-00 | FILM | 0.1uF | 5% | 50V |
| C408 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C409 | 1-124-903-11 | ELECT | 1uF | 20% | 50V |
| C410 | 1-124-902-00 | ELECT | 0.47uF | 20% | 50V |
| C411 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C421 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C422 | 1-124-584-00 | ELECT | 100uF | 20% | 10V |
| C423 | 1-162-290-31 | CERAMIC | 470PF | 10% | 50V |
| C424 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C441 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C442 | 1-124-584-00 | ELECT | 100uF | 20% | 10V |
| C443 | 1-162-290-31 | CERAMIC | 470PF | 10% | 50V |
| C451 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V(G, IT) |
| C452 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V(G, IT) |
| C453 | 1-137-368-11 | FILM | 0.0047uF | 5% | 50V |
| C454 | 1-162-294-31 | CERAMIC | 0.001uF | 10% | 50V |
| C455 | 1-124-903-11 | ELECT | 1uF | 20% | 50V |
| C456 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C457 | 1-136-165-00 | FILM | 0.1uF | 5% | 50V |
| C458 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C459 | 1-124-903-11 | ELECT | 1uF | 20% | 50V |
| C460 | 1-124-902-00 | ELECT | 0.47uF | 20% | 50V |
| C461 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C471 | 1-126-101-11 | ELECT | 100uF | 20% | 16V |
| C472 | 1-126-101-11 | ELECT | 100uF | 20% | 16V |
| C473 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V(G, IT) |
| C474 | 1-124-907-11 | ELECT | 10uF | 20% | 50V |
| C475 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| C476 | 1-124-584-00 | ELECT | 100uF | 20% | 10V |
| C477 | 1-124-465-00 | ELECT | 0.47uF | 20% | 50V |
| C478 | 1-161-375-00 | CERAMIC | 0.0022uF | 20% | 50V |
| C479 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V(G, IT) |
| C480 | 1-161-377-00 | CERAMIC | 0.0047uF | 30% | 16V |
| C481 | 1-162-286-31 | CERAMIC | 220PF | 10% | 50V(G, IT) |
| C482 | 1-124-443-00 | ELECT | 100uF | 20% | 10V |
| C483 | 1-164-159-11 | CERAMIC | 0.1uF | | 50V |
| | | < CONNECTOR > | | | |
| CN301 | 1-764-560-11 | CONNECTOR, FFC/FPC 18P | | | |
| CN302 | 1-564-517-11 | PLUG, CONNECTOR 2P | | | |
| * CN401 | 1-564-520-11 | PLUG, CONNECTOR 5P | | | |
| CN402 | 1-580-783-11 | CONNECTOR, BOARD TO BOARD | | | |
| CN403 | 1-580-783-11 | CONNECTOR, BOARD TO BOARD | | | |
| CN404 | 1-580-783-11 | CONNECTOR, BOARD TO BOARD | | | |
| CN405 | 1-750-739-11 | CONNECTOR, FFC/FPC 7P | | | |
| CN406 | 1-750-739-11 | CONNECTOR, FFC/FPC 7P | | | |
| CN407 | 1-764-302-11 | HOUSING, CONNECTOR(PC BOARD) 24P | | | |

# TC

| Ref.No. | Part No. | Description | Remark |
|---|---|---|---|
| CN408 | 1-695-368-31 | PIN, CONNECTOR (PC BOARD) 7P | (E, AUS, EA, MX, MY, SP) |
| CN409 | 1-691-645-11 | SOCKET, CONNECTOR 9P | |
| | | < DIODE > | |
| D301 | 8-719-200-82 | DIODE 11ES2 | |
| D302 | 8-719-200-82 | DIODE 11ES2 | |
| D303 | 8-719-987-63 | DIODE 1N4148M | |
| D381 | 8-719-047-27 | DIODE SEL4425GM-TP7 | |
| D401 | 8-719-987-63 | DIODE 1N4148M | |
| D402 | 8-719-987-63 | DIODE 1N4148M | |
| D498 | 8-719-987-63 | DIODE 1N4148M | |
| D499 | 8-719-987-63 | DIODE 1N4148M | |
| | | < IC > | |
| IC301 | 8-759-099-08 | IC M50964-260FP | |
| IC302 | 8-759-165-82 | IC PST600E-T | |
| IC401 | 8-759-098-75 | IC HA12171NT | |
| IC402 | 8-759-266-35 | IC TA8242K | |
| | | < COIL > | |
| L401 | 1-410-482-31 | INDUCTOR 100uH | |
| L402 | 1-410-482-31 | INDUCTOR 100uH | |
| | | < TRANSISTOR > | |
| Q301 | 8-729-119-78 | TRANSISTOR 2SC403SP-51 | |
| Q302 | 8-729-900-80 | TRANSISTOR DTC114ES | |
| Q303 | 8-729-900-65 | TRANSISTOR DTA144ES | |
| Q304 | 8-729-900-61 | TRANSISTOR DTA114ES | |
| Q305 | 8-729-900-65 | TRANSISTOR DTA144ES | |
| Q306 | 8-729-900-65 | TRANSISTOR DTA144ES | |
| Q307 | 8-729-900-65 | TRANSISTOR DTA144ES | |
| Q308 | 8-729-900-65 | TRANSISTOR DTA144ES | |
| Q309 | 8-729-900-89 | TRANSISTOR DTC144ES | |
| Q310 | 8-729-900-65 | TRANSISTOR DTA144ES | |
| Q311 | 8-729-900-89 | TRANSISTOR DTC144ES | |
| Q312 | 8-729-900-65 | TRANSISTOR DTA144ES | |
| Q394 | 8-729-900-63 | TRANSISTOR DTA124ES | |
| Q397 | 8-729-900-63 | TRANSISTOR DTA124ES | |
| Q401 | 8-729-119-78 | TRANSISTOR 2SC403SP-51 | |
| Q411 | 8-729-119-78 | TRANSISTOR 2SC403SP-51 | |
| Q412 | 8-729-116-57 | TRANSISTOR 2SB1068-K | |
| Q413 | 8-729-116-57 | TRANSISTOR 2SB1068-K | |
| Q451 | 8-729-119-78 | TRANSISTOR 2SC403SP-51 | |
| | | < RESISTOR > | |
| R301 | 1-249-390-11 | CARBON 5.6 5% | 1/6W |
| R302 | 1-249-429-11 | CARBON 10K 5% | 1/4W |
| R303 | 1-249-421-11 | CARBON 2.2K 5% | 1/4W |
| R304 | 1-249-421-11 | CARBON 2.2K 5% | 1/4W |
| R305 | 1-249-441-11 | CARBON 100K 5% | 1/4W |
| R306 | 1-249-429-11 | CARBON 10K 5% | 1/4W |
| R307 | 1-249-425-11 | CARBON 4.7K 5% | 1/4W |
| R308 | 1-249-425-11 | CARBON 4.7K 5% | 1/4W |
| R309 | 1-249-429-11 | CARBON 10K 5% | 1/4W |
| R310 | 1-249-429-11 | CARBON 10K 5% | 1/4W |
| R311 | 1-247-903-00 | CARBON 1M 5% | 1/4W |
| R312 | 1-247-895-00 | CARBON 470K 5% | 1/4W |
| R313 | 1-247-895-00 | CARBON 470K 5% | 1/4W |
| R314 | 1-249-410-11 | CARBON 270 5% | 1/4W |
| R315 | 1-249-408-11 | CARBON 180 5% | 1/4W |
| R316 | 1-249-410-11 | CARBON 270 5% | 1/4W |
| R317 | 1-249-410-11 | CARBON 270 5% | 1/4W |
| R320 | 1-249-410-11 | CARBON 270 5% | 1/4W |
| R321 | 1-249-410-11 | CARBON 270 5% | 1/4W |
| R322 | 1-249-429-11 | CARBON 10K 5% | 1/4W |
| R390 | 1-249-417-11 | CARBON 1K 5% | 1/4W |
| R391 | 1-249-417-11 | CARBON 1K 5% | 1/4W |
| R392 | 1-249-417-11 | CARBON 1K 5% | 1/4W |
| R393 | 1-249-417-11 | CARBON 1K 5% | 1/4W |
| R394 | 1-249-417-11 | CARBON 1K 5% | 1/4W |
| R401 | 1-249-430-11 | CARBON 12K 5% | 1/4W |
| R402 | 1-249-431-11 | CARBON 15K 5% | 1/4W |
| R403 | 1-249-427-11 | CARBON 6.8K 5% | 1/4W |
| R404 | 1-249-429-11 | CARBON 10K 5% | 1/4W |
| R411 | 1-249-417-11 | CARBON 1K 5% | 1/4W |
| R412 | 1-249-425-11 | CARBON 4.7K 5% | 1/4W |
| R413 | 1-249-425-11 | CARBON 4.7K 5% | 1/4W |
| R414 | 1-249-425-11 | CARBON 4.7K 5% | 1/4W |
| R415 | 1-249-437-11 | CARBON 47K 5% | 1/4W |
| R423 | 1-247-807-31 | CARBON 100 5% | 1/4W |
| R437 | 1-249-429-11 | CARBON 10K 5% | 1/4W |
| R438 | 1-249-429-11 | CARBON 10K 5% | 1/4W |
| R439 | 1-249-429-11 | CARBON 10K 5% | 1/4W |
| R443 | 1-247-807-31 | CARBON 100 5% | 1/4W |
| R451 | 1-249-430-11 | CARBON 12K 5% | 1/4W |
| R452 | 1-249-431-11 | CARBON 15K 5% | 1/4W |
| R453 | 1-249-427-11 | CARBON 6.8K 5% | 1/4W |
| R454 | 1-249-429-11 | CARBON 10K 5% | 1/4W |
| R461 | 1-249-417-11 | CARBON 1K 5% | 1/4W |
| R462 | 1-249-425-11 | CARBON 4.7K 5% | 1/4W |
| R463 | 1-249-425-11 | CARBON 4.7K 5% | 1/4W |
| R464 | 1-249-425-11 | CARBON 4.7K 5% | 1/4W |
| R465 | 1-249-437-11 | CARBON 47K 5% | 1/4W |
| R471 | 1-215-451-00 | METAL 18K 1% | 1/6W |
| R472 | 1-249-429-11 | CARBON 10K 5% | 1/4W |
| R473 | 1-249-429-11 | CARBON 10K 5% | 1/4W |
| R474 | 1-249-429-11 | CARBON 10K 5% | 1/4W |

| Ref. No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| R475 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R476 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R477 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R478 | 1-249-417-11 | CARBON | 1K | 5% | 1/4W | |
| R479 | 1-247-864-11 | CARBON | 24K | 5% | 1/4W | |
| ⚠R480 | 1-212-857-00 | FUSIBLE | 10 | 5% | 1/4W | F |
| R481 | 1-247-885-00 | CARBON | 180K | 5% | 1/4W | |
| R482 | 1-249-432-11 | CARBON | 18K | 5% | 1/4W | |
| R483 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R484 | 1-247-852-11 | CARBON | 7.5K | 5% | 1/4W | |
| R485 | 1-247-864-11 | CARBON | 24K | 5% | 1/4W | |
| R486 | 1-249-441-11 | CARBON | 100K | 5% | 1/4W | |
| ⚠R487 | 1-212-857-00 | FUSIBLE | 10 | 5% | 1/4W | F |
| R488 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R489 | 1-249-415-11 | CARBON | 680 | 5% | 1/4W | |
| R490 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R491 | 1-249-415-11 | CARBON | 680 | 5% | 1/4W | |
| R492 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R493 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R494 | 1-249-434-11 | CARBON | 27K | 5% | 1/4W | |
| R495 | 1-249-429-11 | CARBON | 10K | 5% | 1/4W | |
| R496 | 1-249-434-11 | CARBON | 27K | 5% | 1/4W | |
| R497 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | |
| R498 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | (G, IT) |
| R499 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | (G, IT) |
| R500 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | (G, IT) |
| R501 | 1-249-425-11 | CARBON | 4.7K | 5% | 1/4W | (G, IT) |
| | | < VARIABLE RESISTOR > | | | | |
| RV401 | 1-241-785-11 | RES, ADJ, CARBON 10K(REC LEVEL L) | | | | |
| RV451 | 1-241-785-11 | RES, ADJ, CARBON 10K(REC LEVEL R) | | | | |
| | | < CRYSTAL > | | | | |
| X301 | 1-577-358-21 | VIBRATOR, CERAMIC(4MHz) | | | | |
| ********** | | | | | | |
| * | 1-651-088-11 | TC-SW BOARD | | | | |
| | | ********** | | | | |
| | | < CONNECTOR > | | | | |
| CN3051 | 1-580-482-11 | SOCKET, CONNECTOR 7P | | | | |
| | | < DIODE > | | | | |
| D3051 | 8-719-026-66 | LED SML1460E(FWD) | | | | |
| D3052 | 8-719-026-66 | LED SML1460E(REV) | | | | |

| Ref. No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| | | < RESISTOR > | | | | |
| R3051 | 1-249-418-11 | CARBON | 1.2K | 5% | 1/4W | |
| R3052 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | |
| R3054 | 1-249-421-11 | CARBON | 2.2K | 5% | 1/4W | |
| R3055 | 1-249-424-11 | CARBON | 3.9K | 5% | 1/4W | |
| R3056 | 1-249-430-11 | CARBON | 12K | 5% | 1/4W | |
| R3061 | 1-249-411-11 | CARBON | 330 | 5% | 1/4W | |
| R3063 | 1-249-410-11 | CARBON | 270 | 5% | 1/4W | |
| | | < SWITCH > | | | | |
| S3051 | 1-572-184-11 | SWITCH, KEY BOARD(STOP) | | | | |
| S3052 | 1-572-184-11 | SWITCH, KEY BOARD(REW) | | | | |
| S3053 | 1-572-184-11 | SWITCH, KEY BOARD(FF) | | | | |
| S3054 | 1-572-184-11 | SWITCH, KEY BOARD(FWD) | | | | |
| S3055 | 1-572-184-11 | SWITCH, KEY BOARD(REW) | | | | |
| ********** | | | | | | |
| | | MISCELLANEOUS | | | | |
| | | ********** | | | | |
| 4 | 1-751-965-21 | WIRE (FLAT TYPE) (7 CORE) | | | | |
| ANT1 | 1-501-321-51 | ANTENNA, TELESCOPIC(H650) | | | | |
| ⚠15 | 1-569-007-11 | ADAPTER, CONVERSION 2P(H650:E) | | | | |
| ⚠15 | 1-569-008-11 | ADAPTER, CONVERSION 2P(H650:EA, MY, SP) | | | | |
| ⚠16 | 1-575-651-11 | CORD, POWER(AEP, EA, MY, SP, EE) | | | | |
| ⚠16 | 1-575-653-11 | CORD, POWER(E, MX) | | | | |
| ⚠16 | 1-590-042-11 | CORD, POWER (WITH CORE)(G, IT) | | | | |
| ⚠16 | 1-690-609-11 | CORD, POWER(Canadian) | | | | |
| ⚠16 | 1-696-570-21 | CORD, POWER(UK) | | | | |
| ⚠16 | 1-696-848-21 | CORD, POWER(AUS) | | | | |
| 17 | 1-751-960-21 | WIRE (FLAT TYPE) (19 CORE) | | | | |
| 18 | 1-765-142-21 | WIRE (FLAT TYPE) (17 CORE) | | | | |
| 19 | 1-751-962-11 | WIRE (FLAT TYPE) (11 CORE) | | | | |
| 22 | 1-501-594-21 | ANTENNA (FM)(G) | | | | |
| 55 | 1-751-964-11 | WIRE (FLAT TYPE) (7 CORE) | | | | |
| 62 | 1-590-241-11 | WIRE, FLAT TYPE (7 CORE) | | | | |
| 65 | 1-751-961-21 | WIRE (FLAT TYPE) (9 CORE) | | | | |
| 67 | 1-751-963-11 | WIRE (FLAT TYPE) (18 CORE) | | | | |
| 68 | 1-751-964-11 | WIRE (FLAT TYPE) (7 CORE) | | | | |
| 167 | 1-638-983-11 | PC BOARD, MOTOR FLEXIBLE | | | | |
| 252 | 1-452-719-11 | MAGNET ASSY | | | | |
| 262 | 1-751-806-11 | WIRE (FLAT TYPE) (5 CORE) | | | | |
| 304 | 8-848-144-11 | DEVICE, OPTICAL KSS-240A | | | | |
| 305 | 1-575-001-11 | WIRE, FLAT TYPE (12 CORE) | | | | |
| HP101 | A-2003-757-A | BASE ASSY, HEAD(PLAYBACK) | | | | |
| HRP101 | A-2003-930-A | BASE ASSY, HEAD(PLAYBACK/RECORD) | | | | |
| M101A | X-3363-501-1 | MOTOR ASSY(REEL)(DECK A) | | | | |
| M101B | X-3363-501-1 | MOTOR ASSY(REEL)(DECK B) | | | | |
| M102A | X-3365-377-1 | MOTOR ASSY(CAPSTAN)(DECK A) | | | | |

| | |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.<br>Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.<br>Ne les remplacer que par une pièce portant le numéro spécifié. |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| M102B | X-3365-377-1 | MOTOR ASSY (CAPSTAN) (DECK B) | |
| M901 | X-4917-504-1 | MOTOR ASSY (SLED) | |
| M902 | X-4917-523-1 | MOTOR ASSY (SPINDLE) | |
| M903 | A-4604-363-A | MOTOR (L) ASSY | |

**********

ACCESSORIES & PACKING MATERIALS

**********

| | | | |
|---|---|---|---|
| | 1-467-461-11 | COMMANDER, STANDARD (RM-S755) | |
| | 2-181-754-21 | COVER, BATTERY (FOR RM-S755) | |
| * | 4-965-152-01 | CUSHION (FRONT) | |
| * | 4-965-153-01 | CUSHION (REAR) | |

**********

**********

**HARDWARE LIST**

**********

| | | | |
|---|---|---|---|
| #1 | 7-685-646-79 | SCREW +BVTP 3X8 TYPE2 N-S | |
| #2 | 7-682-547-09 | SCREW +BVTT 3X6 (S) | |
| #3 | 7-682-548-04 | SCREW +BVTT 3X8 (S) | |
| #4 | 7-685-649-79 | SCREW +BVTP 3X14 TYPE2 IT-3 | |
| #5 | 7-685-647-79 | SCREW +BVTP 3X10 TYPE2 N-S | |
| #6 | 7-685-647-79 | SCREW +BVTP 3X10 TYPE2 N-S (H650) | |
| #7 | 7-682-550-09 | SCREW +BVTT 3X12 (S) | |
| #8 | 7-621-770-67 | SCREW +PTT 2.6X6 (S) | |
| #9 | 7-627-556-08 | SCREW +P 2.6X2.8 | |
| #10 | 7-621-775-00 | SCREW +B 2.6X3 | |
| #11 | 7-621-255-15 | SCREW +P 2X3 | |

| | |
|---|---|
| The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified. | Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié. |

9-959-291-11

Sony Corporation
Audio Group

English
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Published by Audio Sector Quality Assurance Dept.

# HCD-H650/H650M

SONY

# SERVICE MANUAL

*AEP Model*
*E Model*
*Australian Model*
*HCD-H650*

*Canadian Model*
*AEP Model*
*UK Model*
*HCD-H650M*

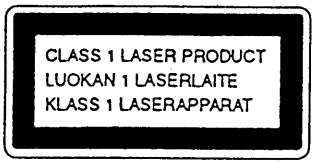
# SUPPLEMENT-1

File this Supplement with the Service Manual.

**Subject :**

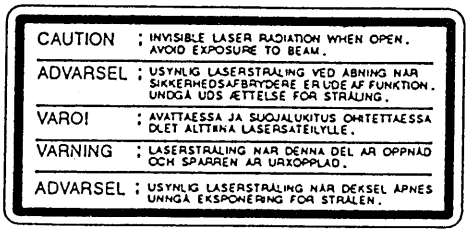
1. MECHANICAL ADJUSTMENTS
2. EXPLANATION OF IC TERMINALS
3. IC BLOCK DIAGRAM
4. BLOCK DIAGRAM
5. CORRECTION

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.




Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

The following caution label is located inside the unit.


CAUTION ; INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ADVARSEL ; USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO! ; AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LASERSATEILYLLE.
VARNING ; LASERSTRÅLING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD.
ADVARSEL ; USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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| EXPLANATION OF IC TERMINALS | 4 | CORRECTION | 15 |
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**Quality Engineering Dept.**

# SPECIFICATIONS

## CD player section

System: Compact disc digital audio system
Laser: Semiconductor laser
Wavelength: 780 – 790 nm

## Tuner section

FM stereo, FM/AM superheterodyne tuner

### *FM tuner section*

Tuning range: 87.5 -108.0 MHz (50 kHz step for except Canadian, East European model) (100kHz step for Canadian model)
FM1 : 65 - 74MHz
FM2 : 87.5 - 108MHz
(East European model)
Aerial: FM lead antenna (HCD-650M)
FM telescopic aerial (HCD-650)
Aerial terminals: 75 ohm unbalanced
Intermediate frequency: 10.7 MHz

### *AM tuner section*

AEP, UK, East European, German model :
Tuning range
MW: 531 - 1,602 kHz
LW: 153 - 279 kHz
Canadian model : AM: 530 -1,710 kHz (10 kHz Step)
531 - 1,710 kHz (9kHz Step)
Italian model : MW : 522 - 1611kHz (9kHz step)
LW : 153 - 279kHz
Australian, Mexican, E, Saudi Arabia, Malaysia, Singapore model :
MW: 531 - 1,602 kHz (9 kHz step)
530 - 1710 kHz (10 kHz step)
SW: 5.95 - 17,9MHz
Aerial: AM loop aerial
External aerial terminals
Intermediate frequency: 450 kHz

## Cassette deck section

Recording system: 4-track 2-channel stereo
Frequency response: (DOLBY NR OFF)
60 – 13,000 Hz (±3 dB), using TYPE I cassette (Sony HF-S)
60 – 14,000 Hz (±3 dB), using TYPE II cassette(Sony UX-S)
Wow and flutter: 0.1% WRMS +0.3% (DIN)

## Amplifier section

For UK, AEP model :
Continuous RMS power output: 35+35 watts (6 ohms at 1 kHz, DIN)
40+40 watts (6 ohms at 1 kHz, 5% THD)
Music power output: 80+80 watts (6 ohms at 1 kHz)
For Canadian model :
Continuous RMS power output: 40+40 watts (6 ohms at 1 kHz, 5%)
For Singapore, E, Saudi Arabia, Malaysia, Australian, Mexican, model :
Coutionuous RMS Power output: 40+40 watts (6 ohms at 1 kHz, 5% THD)
Peak music power output: 500 watts (4 speakers driven)

Inputs
MIX MIC (mini jack): for Canadian, Australian, E, Saudi Arabia, Mexican, Malaysia, Singapore model : Sensitivity 1 mV, impedance 600 ohms
MD/AUX (phono jack): for Canadian, Australian, E, Saudi Arabia, Mexican, Malaysia, Singapore model : Sensitivity 450 mV, impedance 47 kilohms
MD/PHONO : (Phono Position) For UK, AEP, G, IT, EE model : Sensitivity 5 mV
MD/PHONO : (MD Position) for AEP, UK, German, Italian, East European model : Sensitivity 250mV, impedance 47 kilohms

Outputs
HEADPHONES (stereo mini jack): accept headphones of 8 ohms or more.
SPEAKER: accept impedance of 6 to 16 ohms.
SURROUND SPEAKER: for E, Australian, Saudi Arabia, Malaysia, Mexican model : accept impedance of 8 to 16 ohms.
Singapore model :16 Ωs.

## General

| Destination | Power requirements | Power consumption |
|---|---|---|
| Canadian model | 120V AC, 50Hz | 120W |
| Australian model | 220 – 240V AC, 50Hz | 150W |
| AEP, German, Italian, East European model | 220 – 230V AC, 50/60Hz | 120W |
| UK model | 240V AC, 50Hz | 120W |
| E, Saudi Arabia, Mexican, Malaysia, Singapore model | 110 – 120V/220V – 240V AC, 50/60Hz Adjustable with the Voltage Selector | 150W |

Dimensions: Approx. 225 x 285 x 275 mm (w/h/d) (8 7/8 x 11 1/4 x 10 7/8 inches) incl. projecting parts and controls
Mass: Approx. 6.5 kg (14 lb. 50 oz.)

Design and specifications are subject to change without notice.

*Note*

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

## MECHANICAL ADJUSTMENTS

**PRECAUTION**

1. Clean the following parts with a denatured-alcohol-moistened swab :
   record/playback head  pinch roller
   erase head  rubber belts
   capstan  idlers
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

- **Torque Measurement**

| Torque | Torque Meter | Meter Reading |
|---|---|---|
| Forward | CQ-102C | 35 to 60 g•cm (0.49 – 0.82 oz•inch) |
| Forward Back Tension | CQ-102C | 2 to 6 g•cm (0.026 – 0.082 oz•inch) |
| Reverse | CQ-102RC | 35 to 60 g•cm (0.49 – 0.82 oz•inch) |
| Reverse Back Tension | CQ-102RC | 2 to 6 g•cm (0.026 – 0.082 oz•inch) |
| FF, REV | CQ-201B | 70 to 110 g•cm (0.97 oz to 1.53 oz•inch) |

## EXPLANATION OF IC TERMINALS

### IC201 DISPLAY CONTROLLER ( μPD78043GF-060-3B9)

| Pin No. | Pin name | I/O | Description |
|---|---|---|---|
| 1 | 5G | O | FL display drive. |
| 2 | 6G | O | |
| 3 | 7G | O | |
| 4 | 8G | O | |
| 5 | 9G | O | |
| 6 | 10G | O | |
| 7 | 11G | O | |
| 8 | $V_{DD}$ | – | +5v. |
| 9 | VOL+ | O | Volume motor control output. "H" : Volume up |
| 10 | VOL – | O | Volume motor control output. "H" : Volume down |
| 11 | DI • PLL | I | Serial data input from tuner PLL IC. (LC7218) |
| 12 | CE • PLL | O | Chip select output to tuner PLL IC. (LC7218) |
| 13 | DO • PLL | O | Serial data output to tuner PLL IC. (LC7218) |
| 14 | CLK • PLL | O | Serial clock output to tuner PLL IC. (LC7218) |
| 15 | DI • 7522 | O | Serial data output equalizer controller. (IC731, NJU7305L) |
| 16 | CLK • 7522 | O | Serial clock output equalizer controller. (IC731, NJU7305L) |
| 17 | RESET | I | Reset. "L" : Reset |
| 18 | B | O | Spectrum analyzer input switching output. |
| 19 | A | O | |
| 20 | $AV_{SS}$ | – | GND |
| 21 | BACK • UP | I | Backup mode detection input. "L" : Backup mode |
| 22 | STEREO | I | Stereo discrimination from FM/AM IF amplifier (LA1831). "L" : Stereo |
| 23 | TUNED | I | Tuning discrimination from FM/AM IF amplifier (LA1831). "L" : Tuning |
| 24 | COM2 | I | Spectrum analyzer input. (63Hz, 250Hz, 1kHz) |
| 25 | COM1 | I | Spectrum analyzer input. (4kHz, 10kHz) |
| 26 | KEY. IN2 | I | Key input. |
| 27 | KEY. IN1 | I | |
| 28 | KEY. IN0 | I | |
| 29 | $AV_{DD}$ | – | +5V power supply. |
| 30 | AV. REF | – | +5V power supply. |
| 31 | XT1 | I | Subsystem clock (32.768kHz). Connected to crystal oscillator. |
| 32 | XT2 | O | |
| 33 | $V_{SS}$ | – | GND |
| 34 | X1 | I | System clock (4.19MHz). Connected to crystal oscillator. |
| 35 | X2 | O | |
| 36 | DATA | I/O | Write/read data I/O with EEPROM (X24C01P) |
| 37 | CLK | O | Serial clock output to EEPROM (X24C01P) |
| 38 | CLK | O | Serial clock output to 16-bit serial/parallel converter. (M50255P) |
| 39 | DATA | O | Serial data output to 16-bit serial/parallel converter. (M50255P) |
| 40 | D3 | I/O | Dispaly data 3 input and key data 3 output with CD controller. ( μ PD75116GF) |

| Pin No. | Pin name | I/O | Description |
|---|---|---|---|
| 41 | D2 | I/O | Display data 2 input and key data 2 output with CD controller. ( $\mu$ PD75116GF) |
| 42 | D1 | I/O | Display data 1 input and key data 1 output with CD controller.( $\mu$ PD75116GF) |
| 43 | D0 | I/O | Display data 0 input and key data 0 output with CD controller. ( $\mu$ PD75116GF) |
| 44 | DPCLK | I | Serial clock input from CD controller. ( $\mu$ PD75116GF) |
| 45 | KEYREQ | O | Key data outpu request to CD controller.. ( $\mu$ PD75116GF) |
| 46 | AUBOUT | O | Audio bus output. |
| 47 | AUBIN | I | Audio bus input. |
| 48 | Vss | – | GND |
| 49 | SIRCS | O | Infrared remote commander signal input. |
| 50 | LOW | O | DBS LOW LED output. |
| 51 | HIGH | O | DBS HIGH LED output. |
| 52 | VDD | – | +5V power supply. |
| 53 | P23 | O | FL display drive. |
| 54 | P22 | O | |
| 55 | P21 | O | |
| 56 | P20 | O | |
| 57 | P19 | O | |
| 58 | P18 | O | |
| 59 | P17 | O | |
| 60 | P16 | O | |
| 61 | P15 | O | |
| 62 | P14 | O | |
| 63 | P13 | O | |
| 64 | P12 | O | |
| 65 | P11 | O | |
| 66 | P10 | O | |
| 67 | P9 | O | |
| 68 | P8 | O | |
| 69 | P7 | O | |
| 70 | P6 | O | |
| 71 | VLOAD | – | – 24V power supply for dirving FL display. |
| 72 | P5 | O | FL display drive. |
| 73 | P4 | O | |
| 74 | P3 | O | |
| 75 | P2 | O | |
| 76 | P1 | O | |
| 77 | 1G | O | |
| 78 | 2G | O | |
| 79 | 3G | O | |
| 80 | 4G | O | |

## IC301 DECK CONTROLLER (M50964-260FP)

<table>
<tr><th>Pin No.</th><th>Pin name</th><th>I/O</th><th>Description</th></tr>
<tr><td>1</td><td>G</td><td></td><td>GND</td></tr>
<tr><td>2</td><td>G</td><td></td><td>GND</td></tr>
<tr><td>3</td><td>G</td><td></td><td>GND</td></tr>
<tr><td>4</td><td></td><td></td><td>Connected +5V.</td></tr>
<tr><td>5</td><td>G</td><td></td><td>GND</td></tr>
<tr><td>6</td><td>B HALF</td><td>I</td><td>Deck B record prevention claw A, B detection input. (Analog)
<table>
<tr><td>Voltage (V)</td><td>1V</td><td>1.9V</td><td>2.8V</td><td>3.9V</td><td>5V</td></tr>
<tr><td>Half</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>OFF</td></tr>
<tr><td>E. PROOF A</td><td>OFF</td><td>ON</td><td>OFF</td><td>ON</td><td>OFF</td></tr>
<tr><td>E. PROOF B</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td></tr>
</table></td></tr>
<tr><td>7</td><td>KEY Y</td><td>I</td><td rowspan="2">KEY input.
<table>
<tr><td>Voltage (V)</td><td>0</td><td>0.3</td><td>0.7</td><td>1.2</td><td>1.7</td><td>2.3</td><td>2.8</td><td>3.4</td><td>4.0</td><td>4.5</td><td>5.0</td></tr>
<tr><td>KEY Y</td><td></td><td></td><td></td><td></td><td></td><td>A◀◀</td><td>A▶▶</td><td></td><td></td><td>RELAY</td><td>OFF</td></tr>
<tr><td>KEY X</td><td>A■</td><td>A▶</td><td>A◀</td><td></td><td></td><td></td><td>HIGH SPEED DUBBING</td><td></td><td>CD</td><td></td><td></td></tr>
</table></td></tr>
<tr><td>8</td><td>KEY X</td><td>I</td></tr>
<tr><td>9</td><td>AMS IN</td><td>I</td><td>AMS signal input.</td></tr>
<tr><td>10</td><td>LM $\overline{ON}$/OFF</td><td>O</td><td>Line mute output.</td></tr>
<tr><td>11</td><td>RM $\overline{ON}$/OFF</td><td>O</td><td>Mute output.</td></tr>
<tr><td>12</td><td>RELAY $\overline{ON}$/OFF</td><td>O</td><td>Control output to REC/PB select switch. (IC31)</td></tr>
<tr><td>13</td><td>$\overline{REC}$/PB</td><td>O</td><td>Dolby IC REC/PB select output.</td></tr>
<tr><td>14</td><td>EQ70</td><td>O</td><td>Playback EQ output for playing deck. (Not used) (Open)</td></tr>
<tr><td>15</td><td>SEL A/$\overline{B}$</td><td>O</td><td>Dolby IC PB input Deck A/B select output.</td></tr>
<tr><td>16</td><td>AMS A/$\overline{B}$</td><td>O</td><td>AMS AMP input Deck A/B select output. (Not used) (Open)</td></tr>
<tr><td>17</td><td>AU BUS</td><td>I</td><td>AUDIO BUS input.</td></tr>
<tr><td>18</td><td>$\overline{BIAS}$ ON/$\overline{OFF}$</td><td>O</td><td>Bias oscillation output.</td></tr>
<tr><td>'19</td><td>AUB OUT</td><td>O</td><td>AUDIO BUS output.</td></tr>
<tr><td>20</td><td>A BUS</td><td>I</td><td>AUDIO BUS normal input.</td></tr>
<tr><td>21</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>22</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>23</td><td>NC</td><td>–</td><td>Not used.</td></tr>
<tr><td>24</td><td>Vss</td><td></td><td>GND</td></tr>
<tr><td>25</td><td>$\overline{RESET}$</td><td>I</td><td>Microcomputer reset input.</td></tr>
<tr><td>26</td><td>XIN</td><td>I</td><td>Clock input. (4MHz)</td></tr>
<tr><td>27</td><td>XOUT</td><td>O</td><td>Clock output. (4MHz)</td></tr>
<tr><td>28</td><td>$\phi$</td><td>O</td><td>Not used. (Open)</td></tr>
<tr><td>29</td><td>Vss</td><td></td><td>GND</td></tr>
<tr><td>30</td><td>PW IN</td><td>I</td><td>POWER OFF detection input.</td></tr>
<tr><td>31</td><td>A STOP</td><td>I</td><td>Deck A STOP switch input.</td></tr>
<tr><td>32</td><td>A HLAF</td><td>I</td><td>Deck A Half switch input.</td></tr>
<tr><td>33</td><td>A SHUT</td><td>I</td><td>Deck A Reel table signal input.</td></tr>
<tr><td>34</td><td>A70U</td><td>I</td><td>Deck A TYPE switch input. (Not used) (Open)</td></tr>
<tr><td>35</td><td>B STOP</td><td>I</td><td>Deck B STOP switch input.</td></tr>
</table>

| Pin No. | Pin name | I/O | Description |
|---|---|---|---|
| 36 | B SHUT | I | Deck B Reel table signal input. |
| 37 | B70U | I | Deck B TYPE switch input. (Not used) (Open) |
| 38 | NC | – | Not used. |
| 39 | ARM 3 | O | Deck A Reel Motor control out. |
| 40 | ARM 2 | O | Deck A Reel Motor control out. |
| 41 | ARM 1 | O | Deck A Reel Motor control out. |
| 42 | BRM 3 | O | Deck B Reel Motor control out. |
| 43 | BRM 2 | O | Deck B Reel Motor control out. |
| 44 | BRM 1 | O | Deck B Reel Motor control out. |
| 45 | H/L | O | Capstan motor speed select. |
| 46 | A CM | O | A Capstan motor ON/OFF. |
| 47 | B CM | O | B Capstan motor ON/OFF. |
| 48 | BS/ASCH | I | Deck A Reel table/BS signal input. |
| 49 | A•P/BSCH | I | Deck B Reel table/A•P signal input. |
| 50 | A•REV | O | Deck A RVS LED output. |
| 51 | A•FWD | O | Deck A FWD LED output. |
| 52 | A PLAY | O | Deck B RVS/FWD LED control output. (Not used) (Open) |
| 53 | DUB H | O | High Speed Dubbing LED output. |
| 54 | DUB N | O | Normal Speed Dubbing LED output. (Not used) (Open) |
| 55 | NC | – | Not used. |
| 56 | CD SYNC | O | Auto CD Synchro LED output. |
| 57 | B•REV | O | Deck B RVS LED output. |
| 58 | B•FWD | O | Deck B FWD LED output. |
| 59 | B PLAY | O | Deck B RVS/FWD LED control output. (Not used) (Open) |
| 60 | B PAUSE | O | Deck B PAUSE LED output. |
| 61 | B•REC | O | Deck B REC LED output. |
| 62 | PASS | O | PASS amplifier switch output to Dolby IC. (IC401) |
| 63 | TEST | I | Electrical adjustment test mode setting. |
| 64 | NC | – | Not used. |
| 65 | Vss | | GND |
| 66 | NC | – | Not used. |
| 67 | Vss | | POWER 5 ± 0.5V. |
| 68 | AVss | | Analog system GND. |
| 69 | VREF | I | Analog system reference voltage input. |
| 70 | DAC | | GND |
| 71 | —— | | GND |
| 72 | —— | | GND |

**[TEST MODE]**

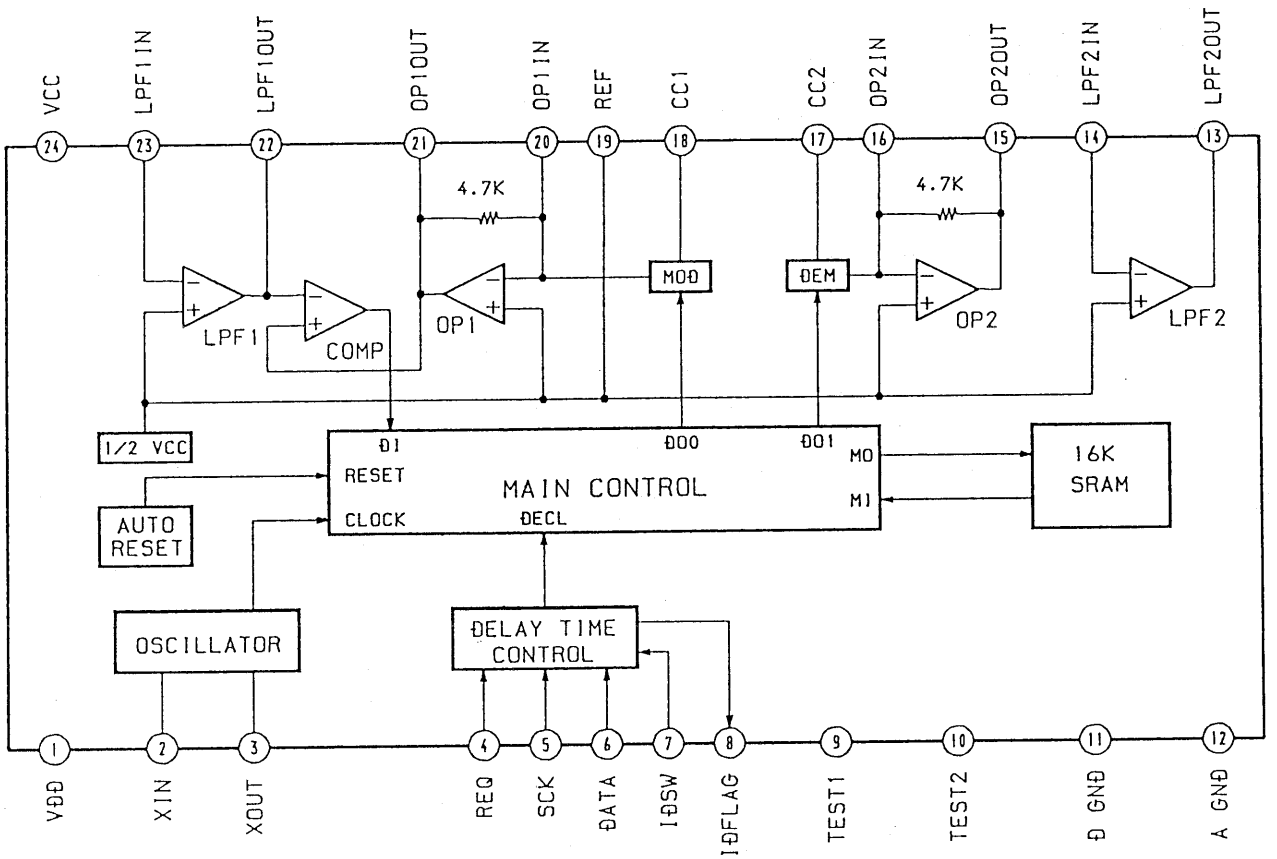
When making pin ⑥③ low (connect TP1 to ground with jumper wire), following function operates.

Source monitor

release the line mute while recording

## • IC BLOCK DIAGRAM

**IC103 M65830AP** (Service Manual See page 26)



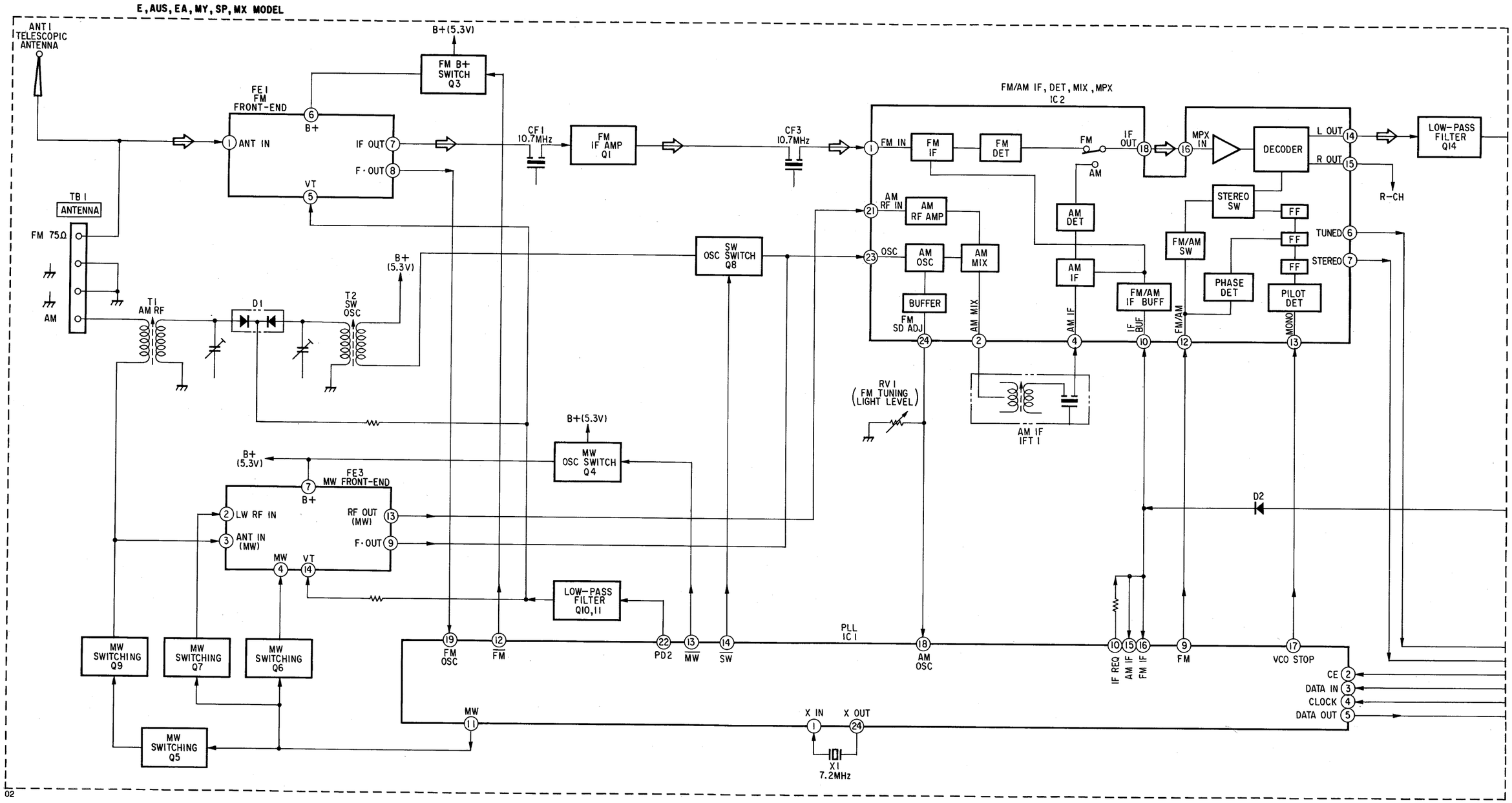
## BLOCK DIAGRAMS (1)

• Abbreviations

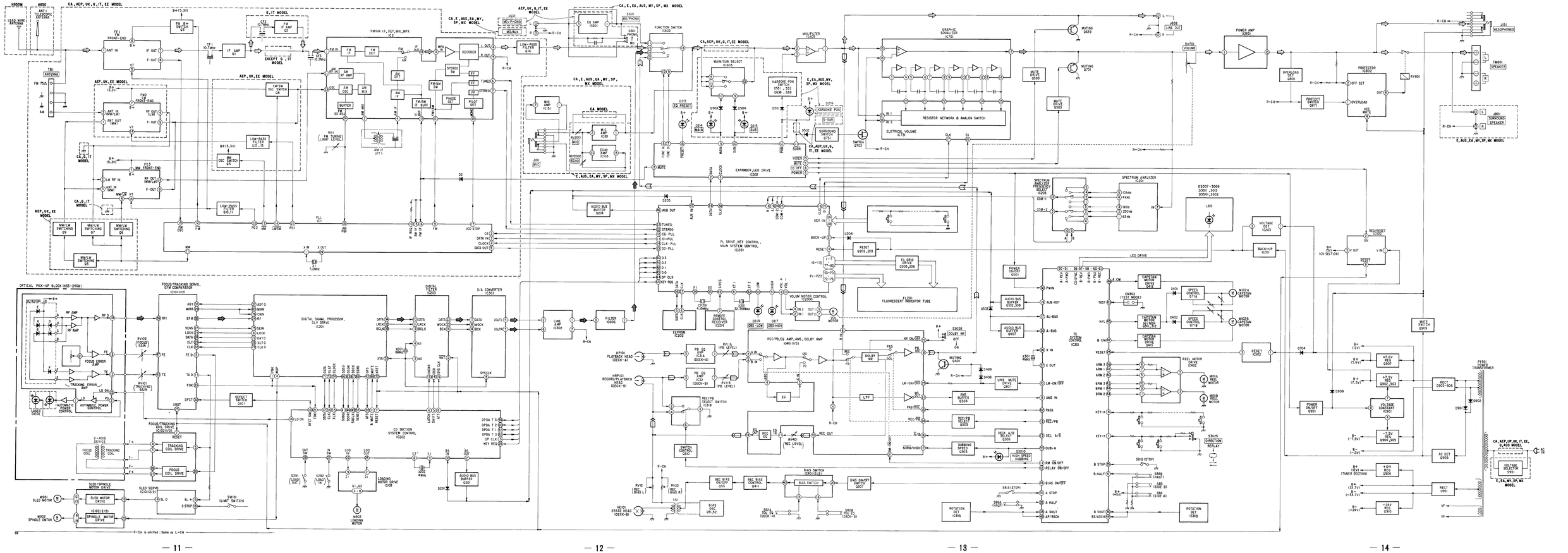
| | | | |
|---|---|---|---|
| CA | : Canadian | EA | : Saudi Arabia |
| AUS | : Australian | EE | : East European |
| G | : German | MY | : Malaysia |
| IT | : Italian | SP | : Singapore |
| MX | : Mexican | | |

• Signal path.

: FM
: PB ( DECK-A )
: PB ( DECK-B )
: REC ( DECK-B )
: CD



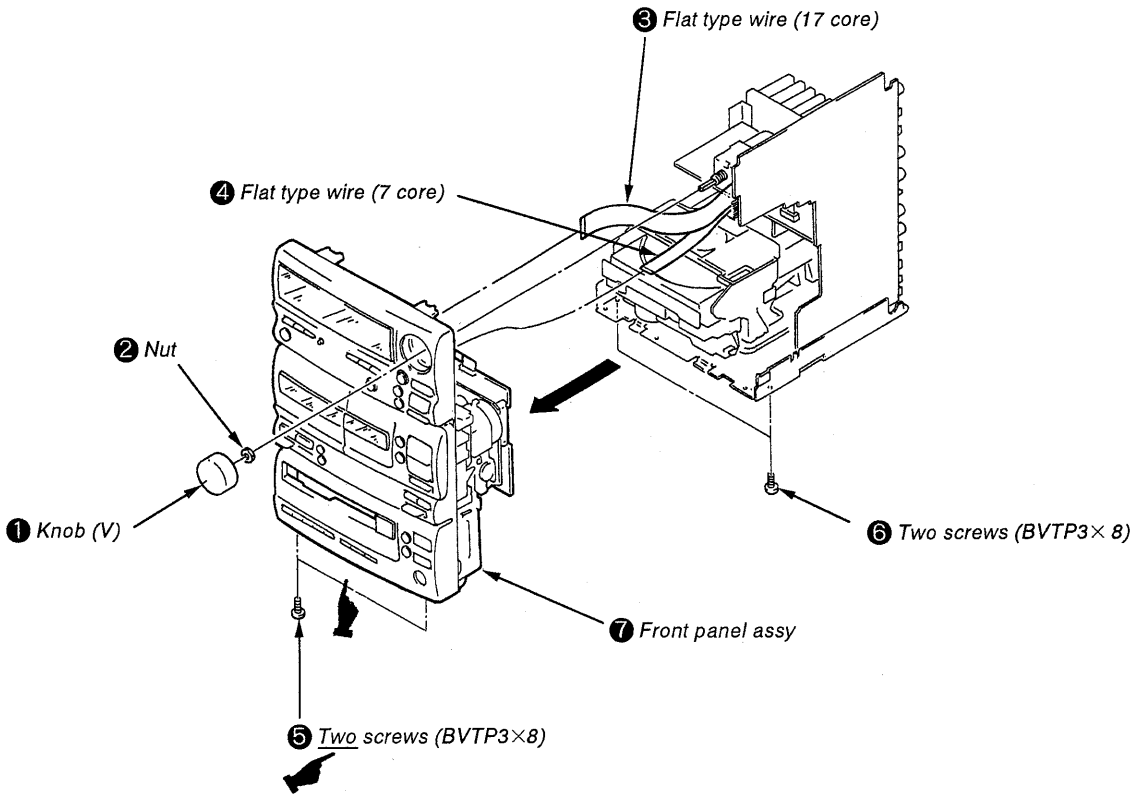

02


H650M
H650
LEAD WIRE ANTENNA
ANT TELESCOPIC ANTENNA
CA, AEP, UK, G, IT, EE MODEL
B+(5.3V)
FW 6 SWITCH Q7
FE1 FRONT-END
ANT IN
IF OUT
F OUT
VT
G, IT MODEL
FM IF AMP Q2
EXCEPT G, IT MODEL
IF AMP Q1
CF1 10.7MHz
CF2 10.7MHz
CF3 10.7MHz
FM/AM IF, DET, MX, MPX IC2
FM IN
FM IF
FM DET
AM RF AMP
AM OSC
AM MIX
AM IF
AM DET
FM/AM SW
PHASE DET
PILOT DET
MPX IN
DECODER
STEREO SW
L OUT
R OUT
TUNED
FF
STEREO
AEP, UK, EE MODEL
FW2 FRONT-END
ANT IN (MW/LW)
ANT OUT (MW)
RF OUT (LW)
LW/MW OSC SWITCH
LOW-PASS FILTER LF3, L5
MW OSC SWITCH Q4
TB1 ANTENNA
FM 75Ω
AM
LW
CA, G, IT MODEL
FE3 MW FRONT-END
LW RF IN
ANT IN (MW/LW)
RF OUT (MW/LW)
MW/LW VT
AEP, UK, EE MODEL
MW/LW SWITCHING Q9
MW/LW SWITCHING Q7
MW/LW SWITCHING Q6
MW/LW SWITCHING Q5
LOW-PASS FILTER LF2, L3, L4
MW OSC SWITCH Q8
PLL IC1
OSC
FMS
MW
LMTW
PS1
FM
VCO
STOP
CE
DATA IN
CLOCK
DATA OUT
X IN
X OUT
7.2MHz
D2
AEP, UK, G, IT, EE MODEL
MIC AMP IC151
MIC AGC IC181
ECHO AMP IC153
RV1000 MIC
RV2000 ECHO
JD1 EQ PRESET
D503 B+
D504 B+
D505 B+
D506 B+
D215 KARAOKE PON
S-SURR
SURROUND SWITCH Q731
SWITCH Q702
CLK
DI
E, AUS, EA, WY, SP, MX MODEL
CA, E, AUS, EA, WY, SP, MX MODEL
JD21 MD/PHONO
MD/AUX
L
R
R-CH
LOW-PASS FILTER Q14
S601 MD/PHONO
EQ AMP IC601
FUNCTION SWITCH IC603
CA, AEP, UK, G, IT, EE MODEL
MAIN/SUB SELECT IC605
D213 MAIN
D214 SUB
KARAOKE PON SWITCH IC606, 552
S-SURR
SURROUND SWITCH Q731
MIX/FILTER IC625
MUTE
MUTE CONTROL Q999
MUTING Q679
MUTE CONTROL Q903
MUTING Q701
GRAPHIC EQUALIZER IC701
RESISTOR NETWORK & ANALOG SWITCH
ELECTRICAL VOLUME IC731
J602 LINE OUT
RV701 VOLUME
POWER AMP IC803
OVERLOAD DET Q801
PROTECT SWITCH Q871
PROTECTOR IC802
OFF SET
OVERLOAD
OUT
RY801
J801 HEADPHONES
TWIN SPEAKER
J801 SURROUND SPEAKER
E, AUS, EA, WY, SP, MX MODEL
MIC AMP IC151
MIC AGC IC181
ECHO AMP IC153
RV1000 MIC
RV2000 ECHO
JDC MIC
E, AUS, EA, WY, SP, MX MODEL
CA MODEL
EXPANDER, LED DRIVE IC302
MUTE
DATA IN
CLOCK
DATA OUT
VIDEO MUTE
CD CD POWER
CA, AEP, UK, G, IT, EE MODEL
AUDIO BUS BUFFER Q204
AUB OUT
AUB IN
LOCK
CLK
TUNED
STEREO
CE-PLL
DI-PLL
CLK-PLL
D3
D2
D1
D0
DSP CLK
KEY REQ
FL DRIVE, KEY CONTROL, MAIN SYSTEM CONTROL IC201
KEY IN
BACK-UP
RESET
RESET Q202, 203
IG-115
77-80
(S1-70)
72-76
FI-P23
FL GRID DRIVE Q205, 206
FL201 FLUORESCENT INDICATOR TUBE
SPECTRUM ANALYZER FREQUENCY CONTROL IC255
COM-1
COM-2
SPECTRUM ANALYZER IC255
63Hz
160Hz
400Hz
1kHz
2.5kHz
6.3kHz
D3007~3009 D301, 302 D350, 3502
LED
LED DRIVE
VOLTAGE DET IC205
BACK-UP Q251
REG/RESET IC260
V OUT
V IN
RESET
B+ TO (I/O SECTION)
OPTICAL PICK-UP BLOCK (KSS-240A)
DETECTOR
RF AMP
RF O
FE
TE
FOCUS ERROR AMP
TRACKING ERROR AMP
LD
PD
LASER DIODE
AUTOMATIC POWER CONTROL
LD ON
RV102 (FOCUS) GAIN
RV101 (TRACKING) GAIN
FOCUS/TRACKING SERVO, STM COMPLEMENTOR IC101 (2/2)
ASY O
WDRR
CNIN
RF
SENS
LOCK
DATO
XLTO
CLK O
FE O
TA O
PCK O
DFCT O
XRST
DEFECT SWITCH Q101
DIGITAL SIGNAL PROCESSOR, CLV SERVO IC201
RFI
EFM
SEIN
LOCK
DATA
XLT
CLK
FOK
AGCP
XTAI
XTAO
XRST
DATA LRCK BCLK
DIGITAL FILTER IC203
DATA LRCK BCLK
XO
INT
SYSCLK
D/A CONVERTER IC301
DATA WDCK BCK
(OUT) L
(OUT) R
LINE AMP IC302
FILTER IC606
R-CH
EEPROM IC202
REMOTE CONTROL RECEIVER IC204
VOLUM MOTOR CONTROL IC202
IN 2
IN 1
OUT 2
OUT 1
MOTOR
D219 DRS-LOW
D217 DRS-HIGH
REC/PB, EQ AMP, AWS, DOLBY AMP IC401(1/2)
HP(O) PLAYBACK HEAD (DECK-A)
HP(I) RECORD/PLAYBACK HEAD (DECK-B)
PB EQ AMP IC3A (DECK-A)
PB EQ AMP IC3B (DECK-B)
RV11A (PB LEVEL)
RV11B (PB LEVEL)
REC/PB SELECT SWITCH IC33
REC EQ
REC
PB
REC MUTE
DOLBY NR
PAS
NR ON/OFF
S3028 DOLBY NR OFF ON
MUTING Q401
LINE MUTE DRIVE Q301
AMS BUFFER Q302
REC/PB BUFFER Q305
DECK A/B SELECT Q306
DUBBING SPEED Q303
S3026 HIGH SPEED DUBBING
RV402 (REC LEVEL)
REC OUT
SWITCH CONTROL Q330
RV12 (BIAS L)
RV22 (BIAS R)
REC BIAS ON/OFF Q53
REC BIAS CONTROL Q411
BIAS SWITCH IC60 (1/2)
BIAS ON/OFF Q307
BIAS OSC Q51,52
ME(O) ERASE HEAD (DECK-B)
SB2A (DECK-A)
SB2B (DECK-B)
TC SYSTEM CONTROL IC301
PWM
AUB-OUT
AU-BUS
A-BUS
X IN
X OUT
LM-ON/OFF
AMS IN
PASS
REC/PB
SEL A/B
DUB-H
RM ON/OFF
RELAY ON/OFF
A STOP
A HALF
A SHUT
AP/BSCH
BIAS ON/OFF
B STOP
B-HALF
B SHUT
BS/ASCH
50-51 56-57 58 60-63
A REC
A PWM
CKOUT
B REC
B PWM
CNDO (TEST MODE)
A CM
TEST
M/L
B-CM
RESET
ARM 1
ARM 2
BRM 3
BRM 1
BRM 2
KEY-Y
KEY-Y
B STOP
B-HALF
S801 (STOP)
S802 (HALF)
S803 (START)
S804 (HALF)
CAPSTAN MOTOR DRIVE IC412
CAPSTAN MOTOR (DECK-A)
CAPSTAN MOTOR (DECK-B)
CAPSTAN MOTOR DRIVE Q410
SPEED CONTROL Q716
SPEED CONTROL Q718
M102A CAPSTAN MOTOR
M102B CAPSTAN MOTOR
REEL MOTOR DRIVE IC402
M101A REEL MOTOR
M101B REEL MOTOR
S3025 DIRECTION RELAY
RESET IC302
Q704
MUTE SWITCH Q909
POWER ON/OFF Q901
POWER ON/OFF Q901
D909
PY951 POWER TRANSFORMER
+5.6V REG Q907
+7.5V REG Q902, 903
VOLTAGE CONSTANT IC901
-7.5V REG Q904, 905
+10V REG Q906
-24V REG Q910
RECT D903~906
D902
D904
RECT D951
AC DET Q908
CA, AEP, UP, UK, IT, EE, G, AUS MODEL
E, EA, WY, SP, MX MODEL
AC IN
SLED/SPINDLE MOTOR DRIVE
SLED MOTOR DRIVE IC102 (2/2)
SPINDLE MOTOR DRIVE
M901 SLED MOTOR
M902 SPINDLE MOTOR
SLED SERVO IC101(2/2)
SL O
S STOP
SW101 (LIMIT SWITCH)
FOCUS/TRACKING COIL DRIVE IC101(1/2)
RESET
TRACKING COIL DRIVE
FOCUS COIL DRIVE
2-AXIS DEVICE
FOCUS COIL
TRACKING COIL
T+
T-
F+
F-
CD SECTION SYSTEM CONTROL IC202
OUT SW
IN SW
LOD ON
LOD OUT
SW
SENS
LOCK
DFCT
FOK
SQCK
SQSY
SENS
SCOR
SCSY
SFDR
SFSY
SRDT
SCLK
XLAT
SCKT
LATCH
SHIFT
ATT
DPDA T 3
DPDA T 2
DPDA T 1
DPDA T 0
DP CLK
KEY REQ
S291 (LOAD) OUT
S292 (LOAD) IN
Q1, Q2
LOADING MOTOR DRIVE IC103
M903 LOADING MOTOR
X2
X1
X203 4MHz
BS
BU
AUDIO BUS BUFFER Q201
D201
R-CH is omitted : Same as L-CH

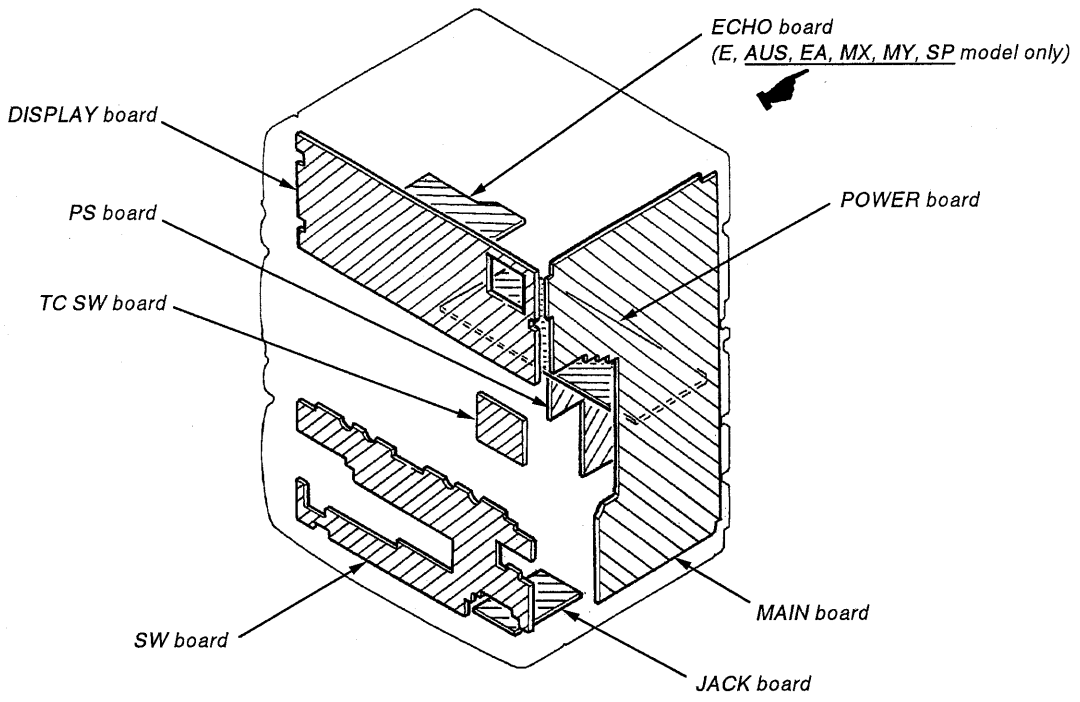
## CORRECTION

☛ : corrected portion

**2-3. FRONT PANEL REMOVAL** (Service Manual See page 6)

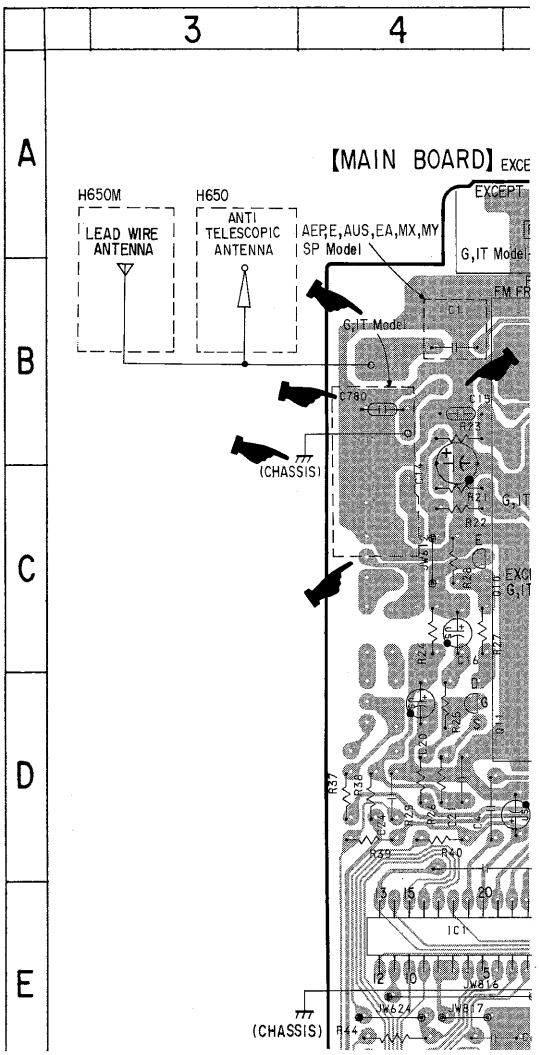


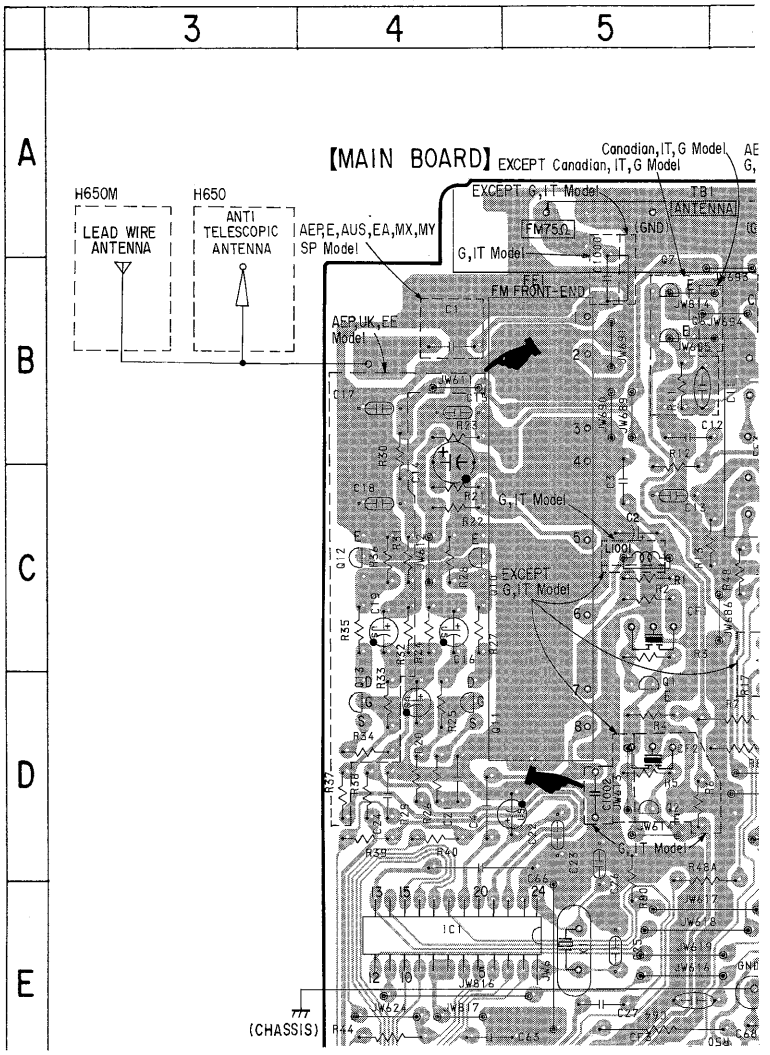

**4-1. CIRCUIT BOARD LOCATION** (Service Manual See page 15)



☛ : corrected portion

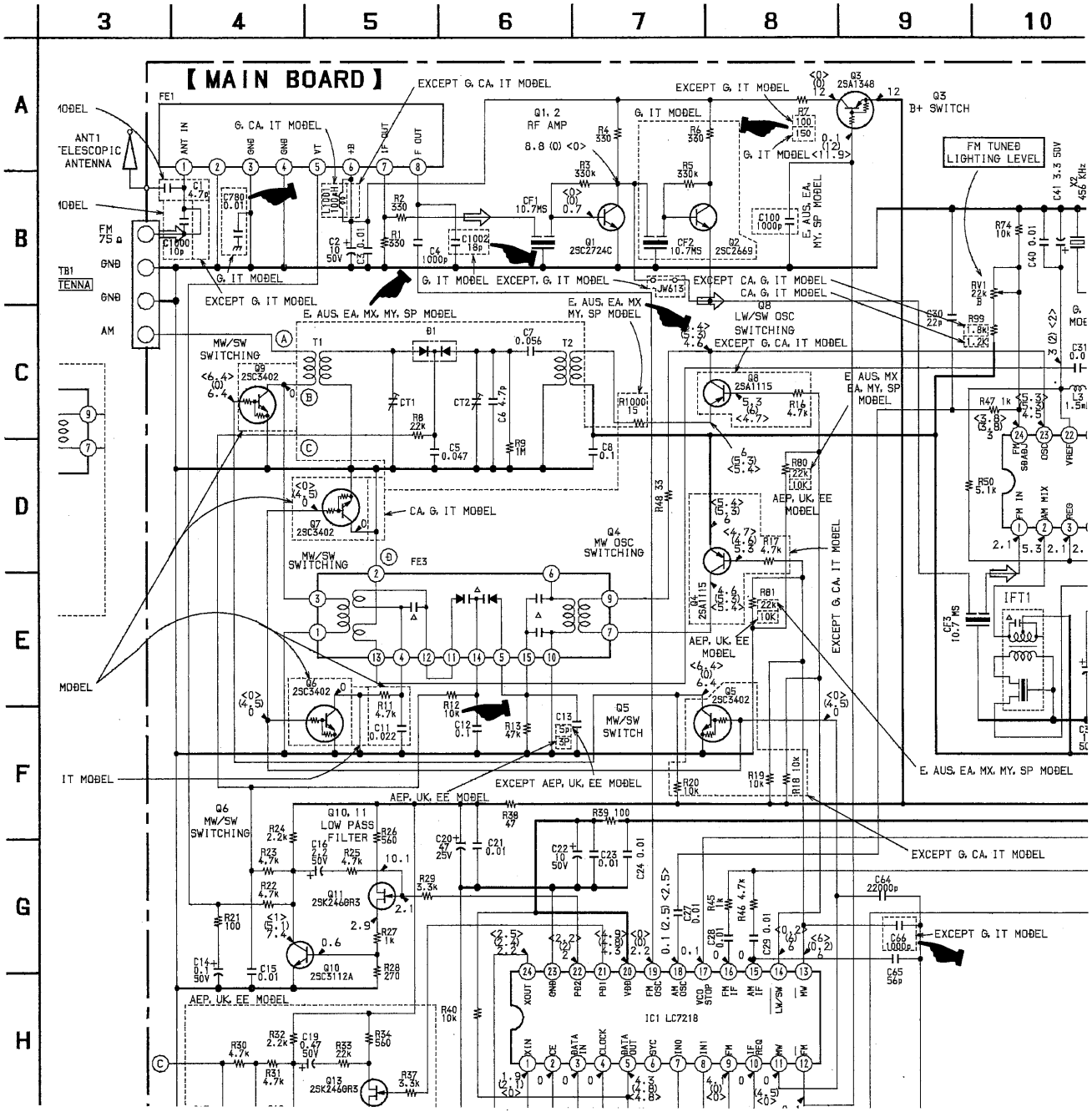
● **PRINTED WIRING BOARDS – MAIN SECTION –** (Service Manual See page 17)



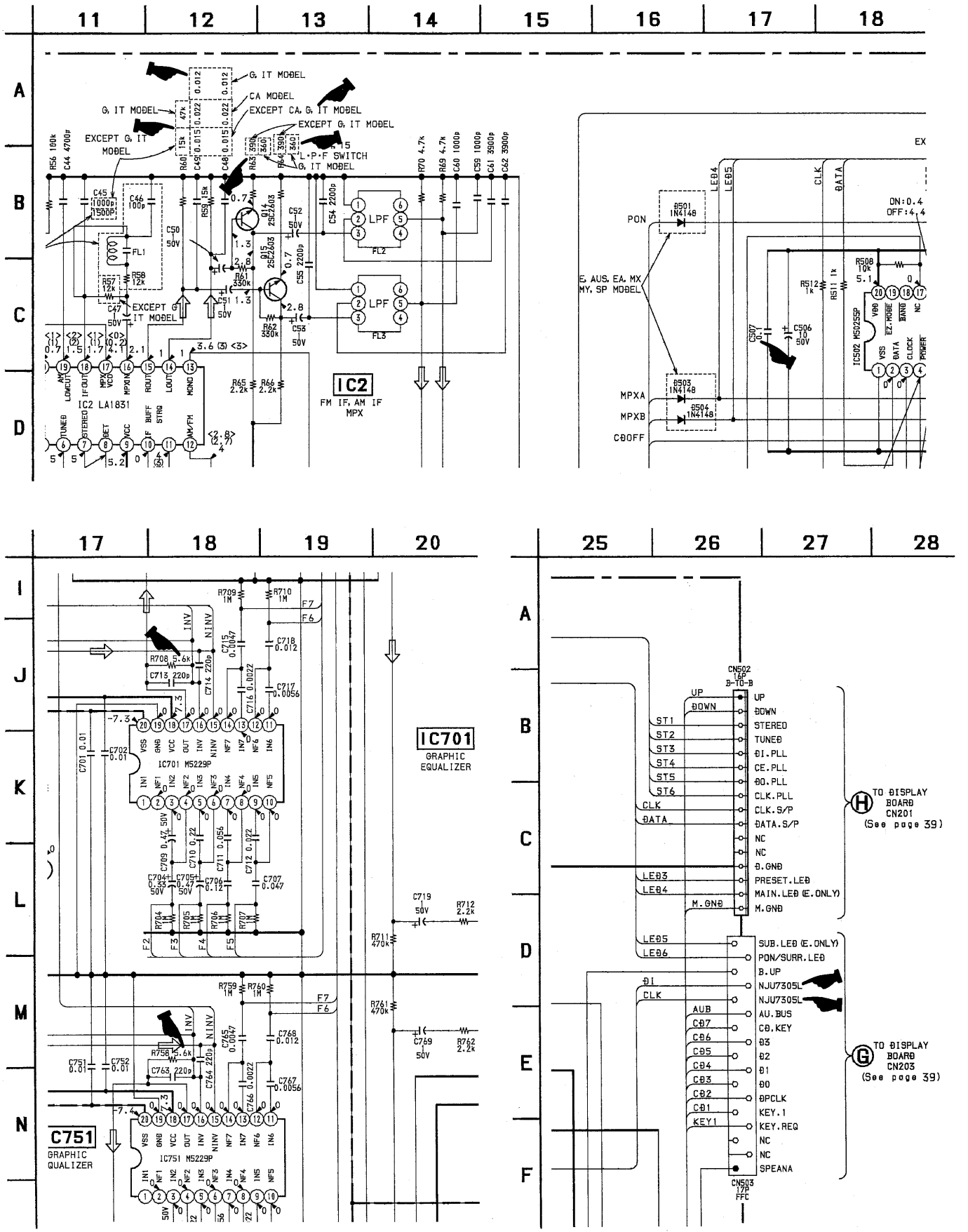
☛ : corrected portion

● **SCHEMATIC DIAGRAM – MAIN SECTION –** (Service Manual See page 19, 20)



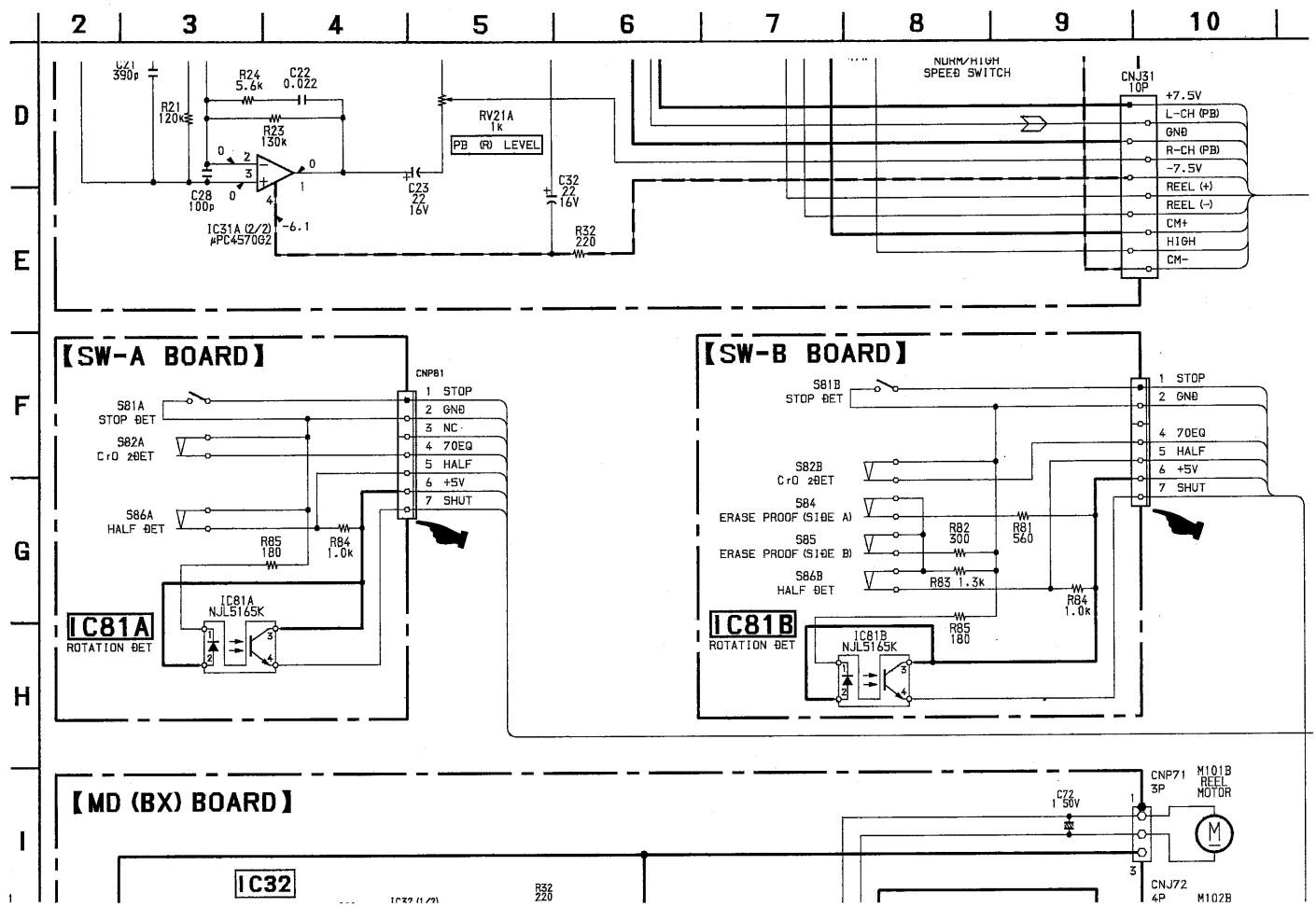
: corrected portion

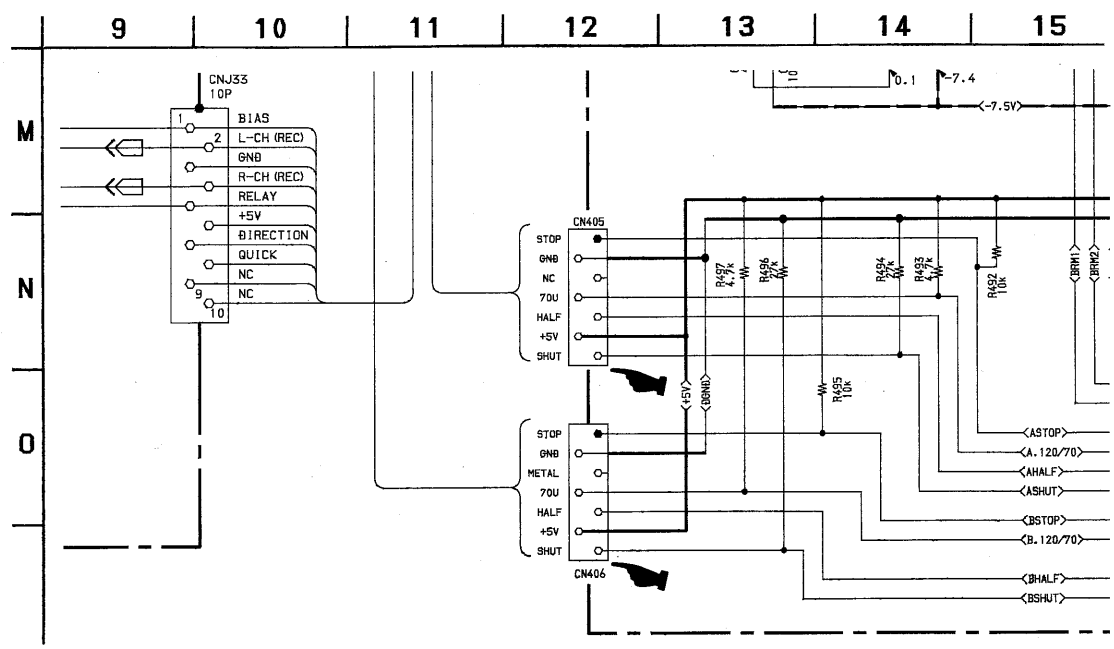
## • SCHEMATIC DIAGRAM – MAIN SECTION – (Service Manual See page 20 – 22)



☛ : corrected portion

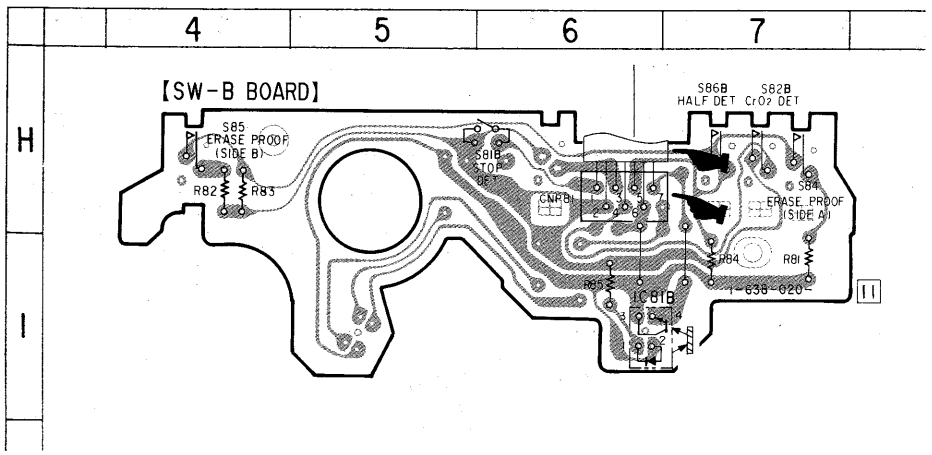
● **SCHEMATIC DIAGRAM – DECK SECTION –** (Service Manual See page 24, 25)

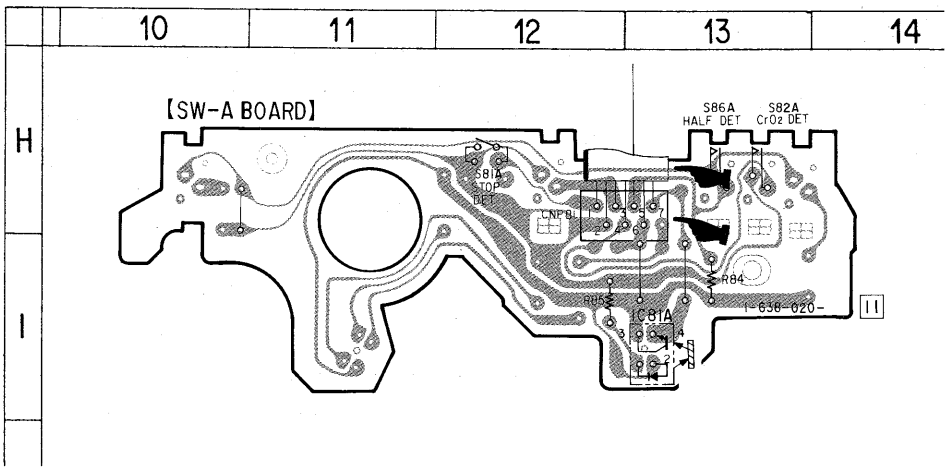


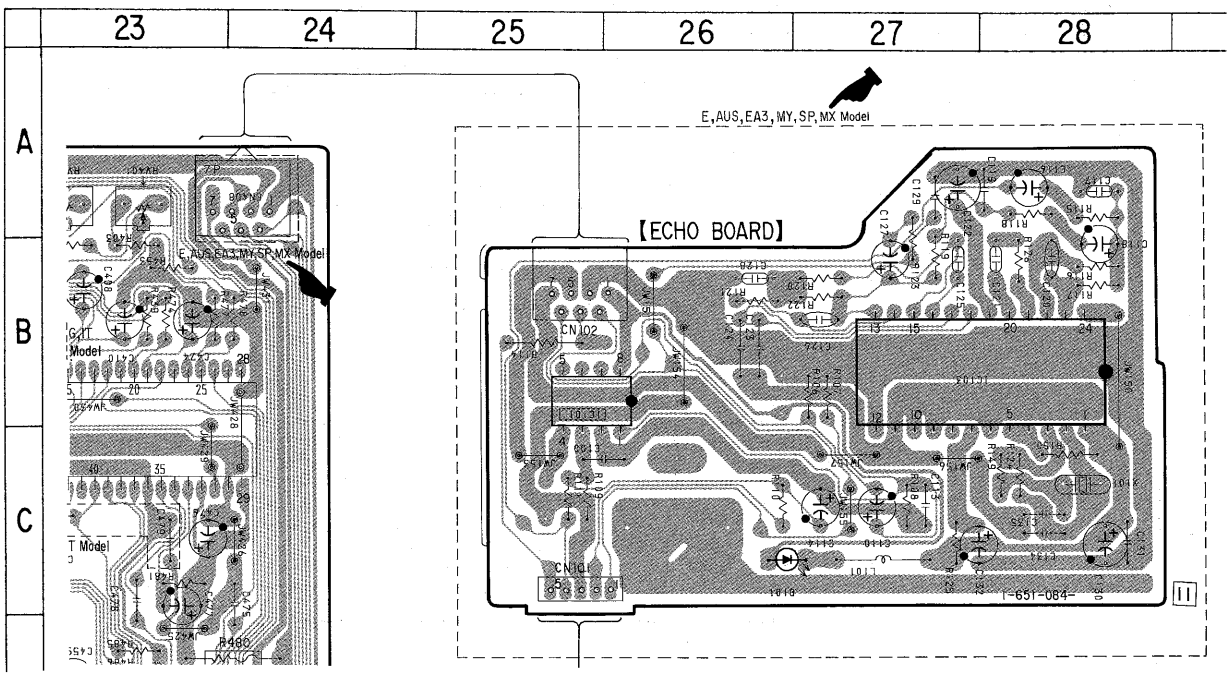



☛ : corrected portion

● **PRINTED WIRING BOARDS – DECK SECTION –** (Service Manual See page 29 – 32)

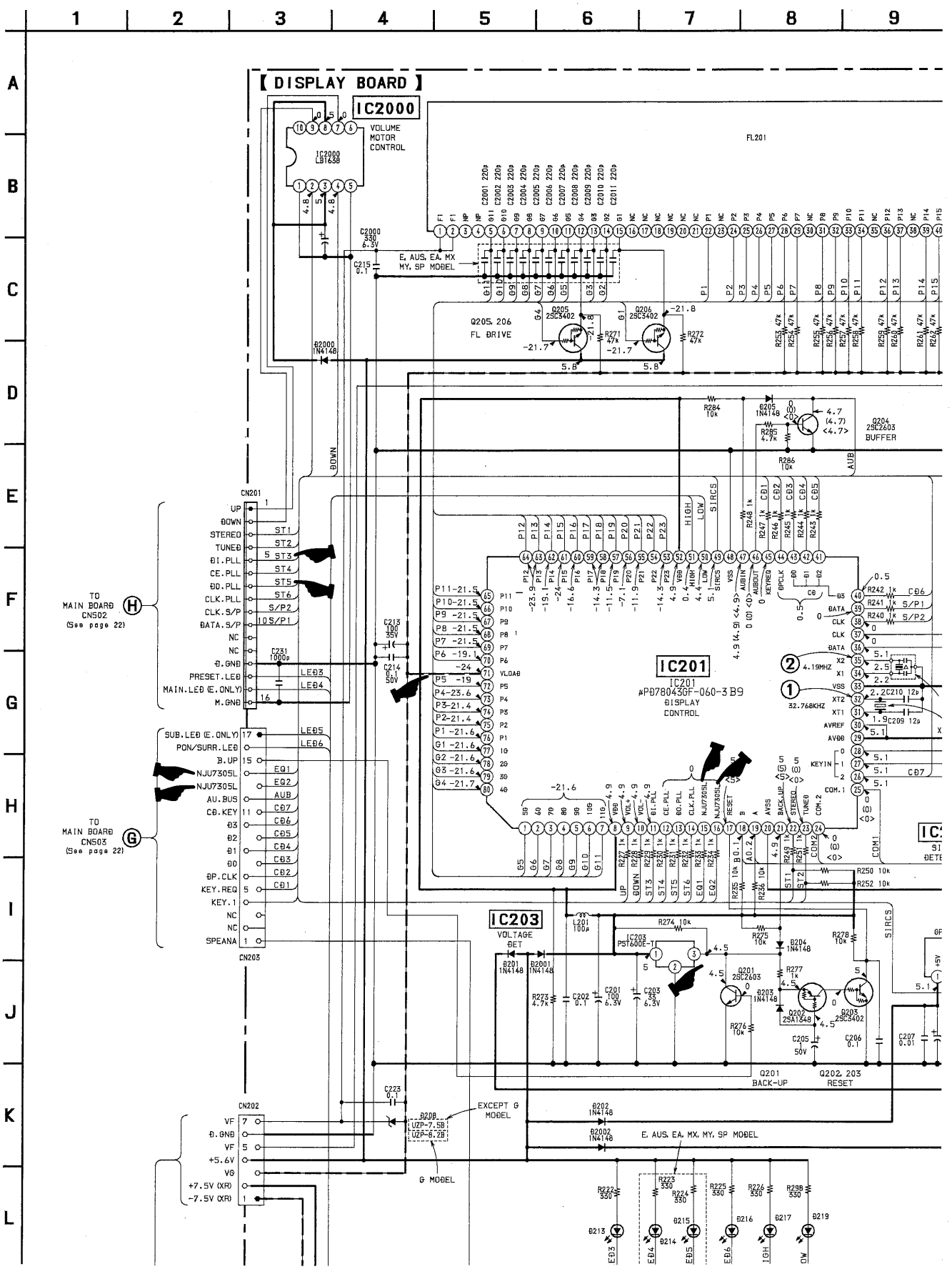


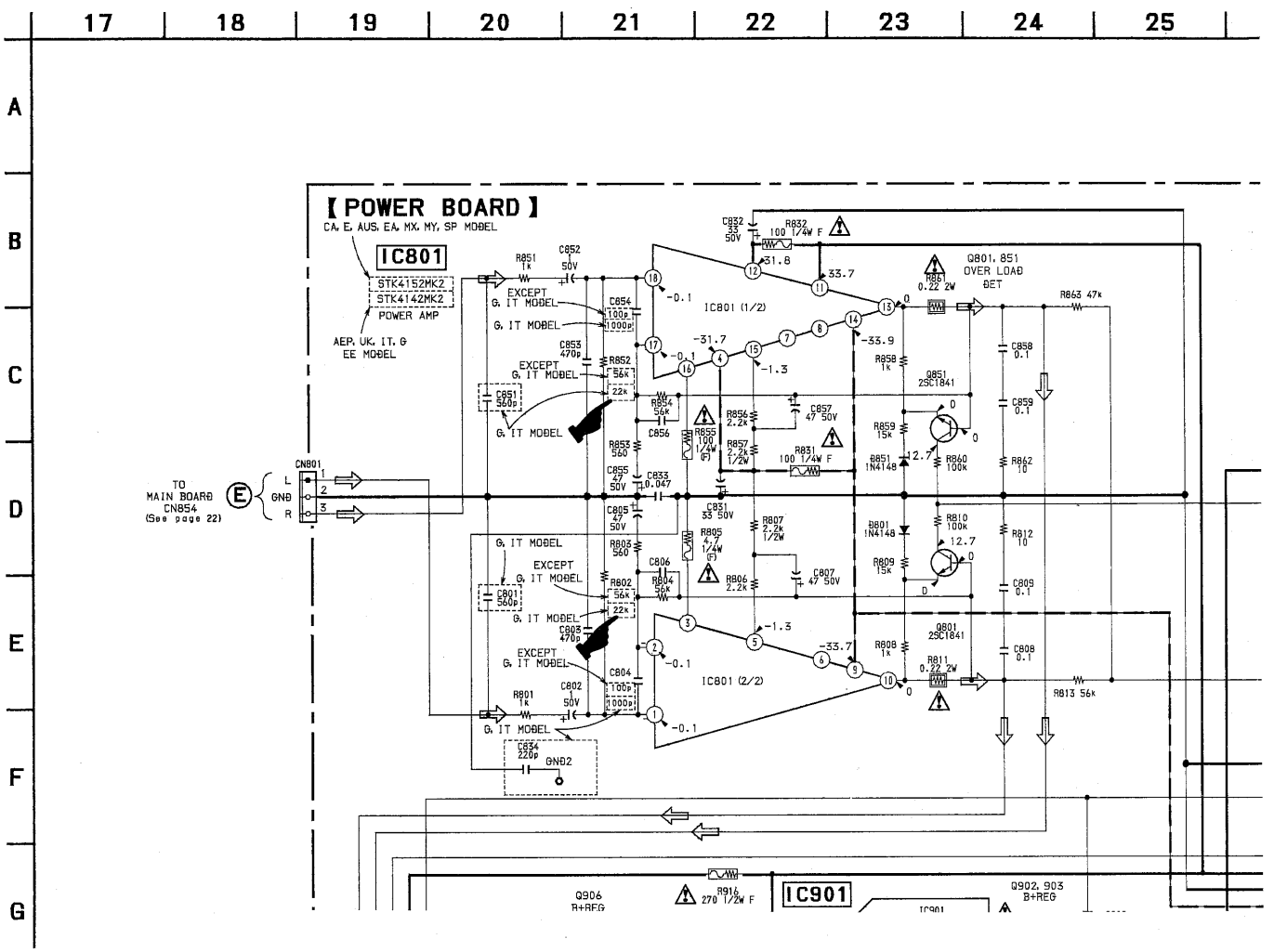
☛ : corrected portion

● **SCHEMATIC DIAGRAM – DISPLAY SECTION –** (Service Manual See page 39)



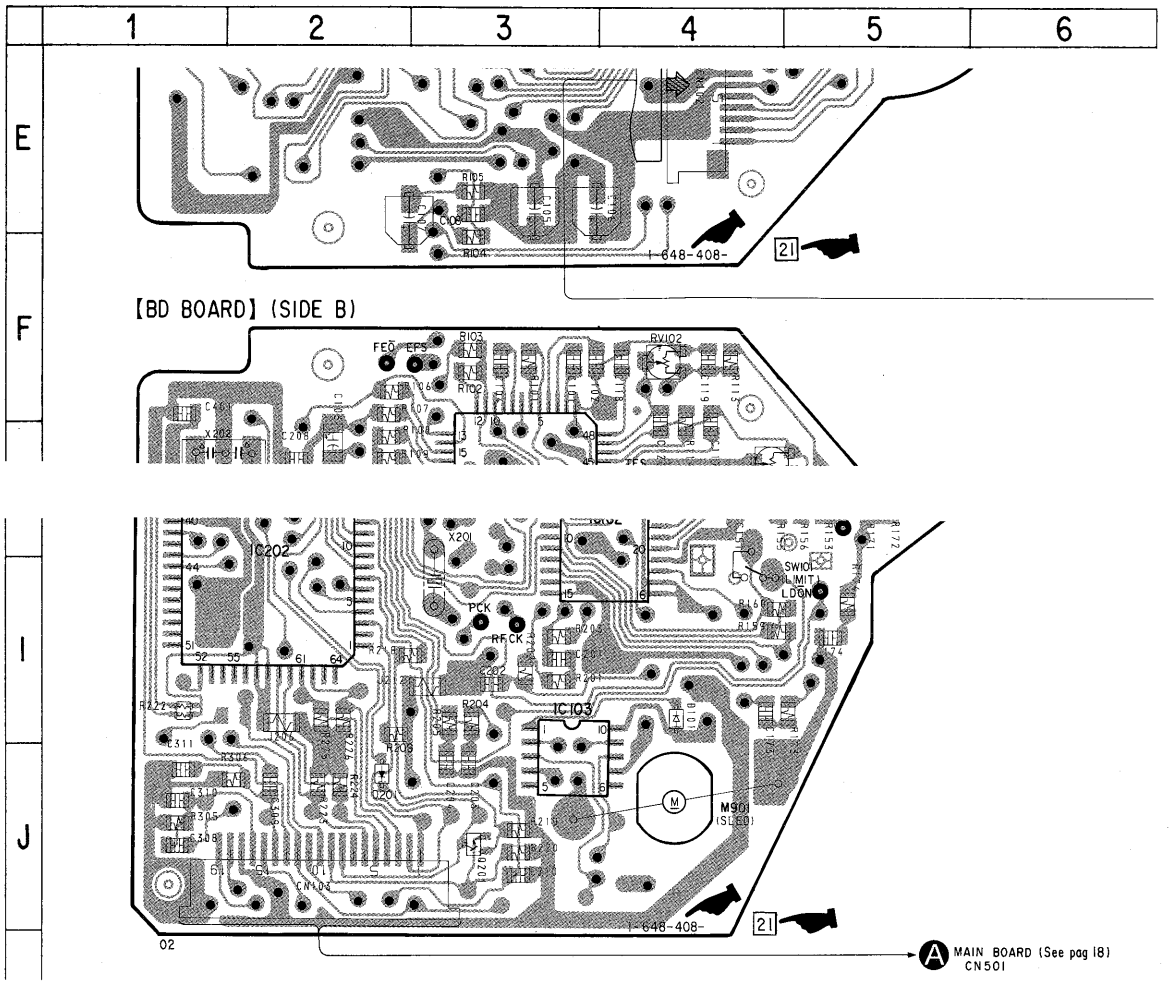
☛ : corrected portion

● **SCHEMATIC DIAGRAM – DISPLAY SECTION –** (Service Manual See page 41)

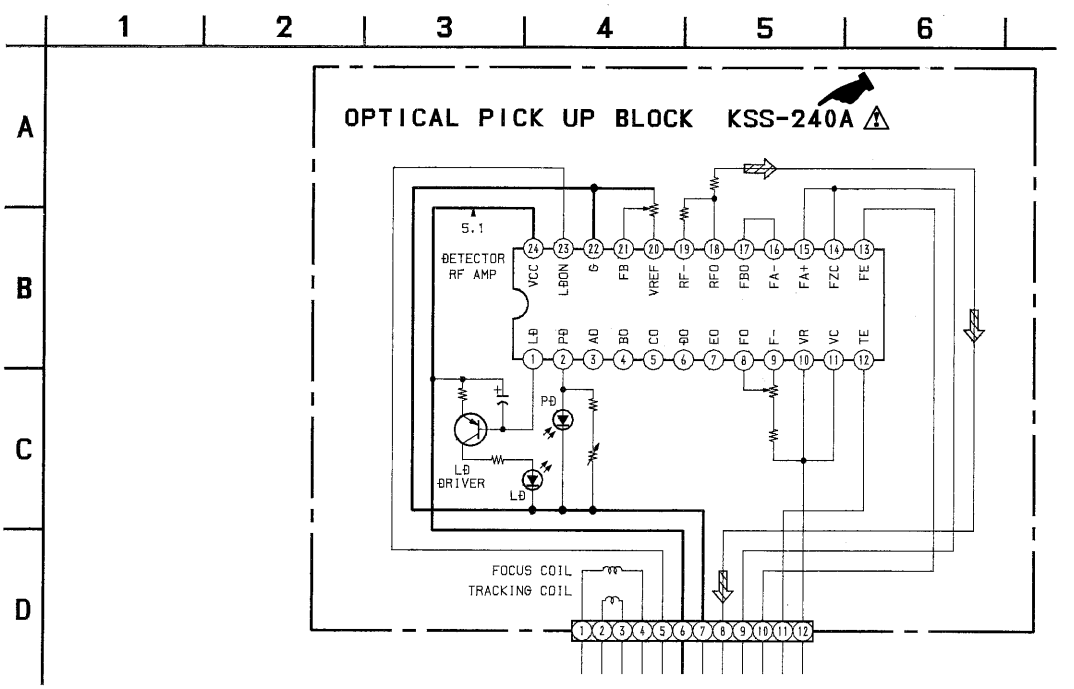


☛ : corrected portion

● **PRINTED WIRING BOARDS – CD SECTION –** (Service Manual See page 47)

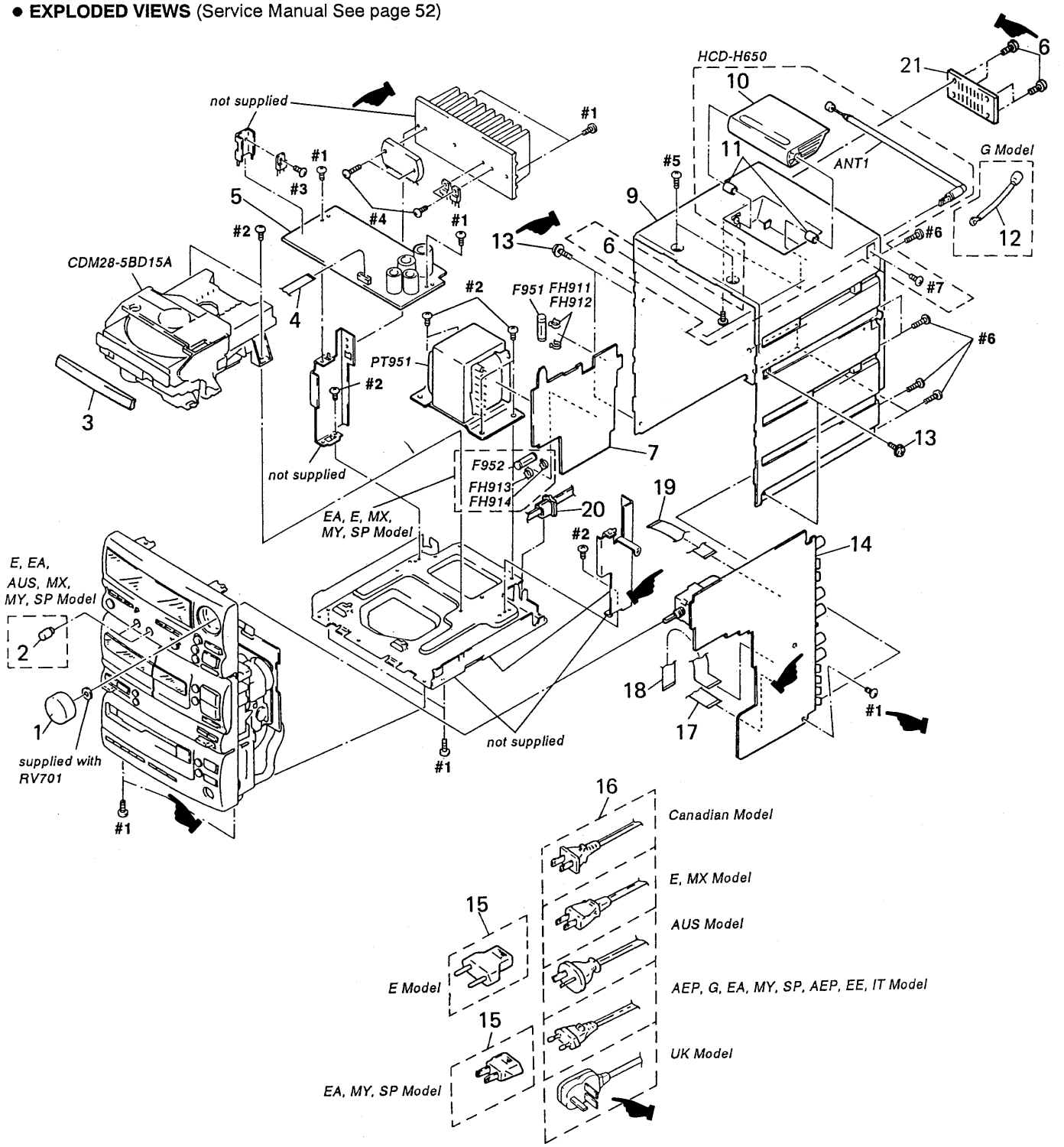



● **SCHEMATIC DIAGRAM – CD SECTION –** (Service Manual See page 49)



: corrected portion

• **EXPLODED VIEWS** (Service Manual See page 52)



☛ : corrected portion

**5-4. MECHANISM DECK SECTION-1** (Service Manual See page 56)
**(DECK A : TCM-190RA12AL)**
**(DECK B : TCM-190RB53A)**

**5-5. MECHANISM DECK SECTION-2** (Service Manual See page 57)
**(DECK A : TCM-190RA12AL)**
**(DECK B : TCM-190RB53A)**

**5-6. CD MECHANISM SECTION-1** (Service Manual See page 58)
**(CDM28-5BD15A)**

● **ELECTRICAL PARTS LIST** (Servic Manual See page 64 – 80)

**INCORRECT** ⟶ **CORRECT**

| Ref. No. | Part No. | Description | Part No. | Description | Remark |
|---|---|---|---|---|---|
| R2052 (Page 64) | 1-249-429-11 | CARBON 10K 5% 1/4W (G) | ——— | ——— | Deleted |
| C48 (Page 67) | 1-130-485-00 | MYLAR 0.015uF 5% 50V (EXCEPT Canadian) | 1-130-485-00 | MYLAR 0.15uF 5% 50V (EXCEPT Canadian, G, IT) | Changed |
| C48 (Page 67) | ——— | ——— | 1-130-489-00 | MYLAR 0.012uF 5% 50V (G, IT) | Added |
| C49 (Page 67) | 1-130-485-00 | MYLAR 0.15uF 5% 50V (EXCEPT Canadian) | 1-130-485-00 | MYLAR 0.15uF 5% 50V (EXCEPT Canadian, G, IT) | Changed |
| C49 (Page 67) | ——— | ——— | 1-130-489-00 | MYLAR 0.012uF 5% 50V (G, IT) | Added |
| C66 (Page 67) | 1-162-294-31 | CERAMIC 0.001uF 10% 50V | 1-162-294-31 | CERMIC 0.001uF 10% 50V (EXCEPT G, IT) | Changed |
| C507 (Page 67) | 1-161-379-00 | CERAMIC 0.01uF 20% 25V | 1-164-159-11 | CERAMIC 0.1uF 20% 50V | Changed |
| C1002 (Page 68) | ——— | ——— | 1-162-205-31 | CERAMIC 18PF 5% 50V (G, IT) | Added |
| R7 (Page 69) | 1-247-807-31 | CARBON 100 5% 1/4W | 1-247-807-31<br>1-247-811-31 | CARBON 100 5% 1/4W (EXCEPT G, IT)<br>CARBON 150 5% 1/4W (G, IT) | Changed |
| R12 (Page 69) | 1-249-437-11 | CARBON 47K 5% 1/4W | 1-249-429-11 | CARBON 10K 5% 1/4W | Changed |
| R59 (Page 70) | 1-249-431-11 | CARBON 15K 5% 1/4W | 1-249-431-11<br>1-249-437-11 | CARBON 15K 5% 1/4W (EXCEPT G, IT)<br>CARBON 47K 5% 1/4W (G, IT) | Changed |
| R60 (Page 70) | 1-249-431-11 | CARBON 15K 5% 1/4W | 1-249-431-11<br>1-249-437-11 | CARBON 15K 5% 1/4W (EXCEPT G, IT)<br>CARBON 47K 5% 1/4W (G, IT) | Changed |
| R63 (Page 70) | 1-249-412-11 | CARBON 390 5% 1/4W | 1-249-412-11<br>1-247-820-11 | CARBON 390 5% 1/4W (EXCEPT G, IT)<br>CARBON 360 5% 1/4W (G, IT) | Changed |
| R64 (Page 70) | 1-249-412-11 | CARBON 390 5% 1/4W | 1-249-412-11<br>1-247-820-11 | CARBON 390 5% 1/4W (EXCEPT G, IT)<br>CARBON 360 5% 1/4W (G, IT) | Changed |
| R708 (Page 71) | 1-249-427-11 | CARBON 6.8K 5% 1/4W | 1-249-426-11 | CARBON 5.6K 5% 1/4W | Changed |
| R758 (Page 71) | 1-249-427-11 | CARBON 6.8K 5% 1/4W | 1-249-426-11 | CARBON 5.6K 5% 1/4W | Changed |
| C780 (Page 74) | ——— | ——— | 1-161-379-00 | CERAMIC 0.01uF 20% 25V (G, IT) | Added |
| R802 (Page 75) | 1-249-438-11 | CARBON 56K 5% 1/4W | 1-249-433-11 | CARBON 22K 5% 1/4W | Changed |
| R852 (Page 71) | 1-249-438-11 | CARBON 56K 5% 1/4W | 1-249-433-11 | CARBON 22K 5% 1/4W | Changed |
| #11 (Page 80) | 7-621-255-15 | SCREW +P 2X3 | ——— | ——— | Deleted |